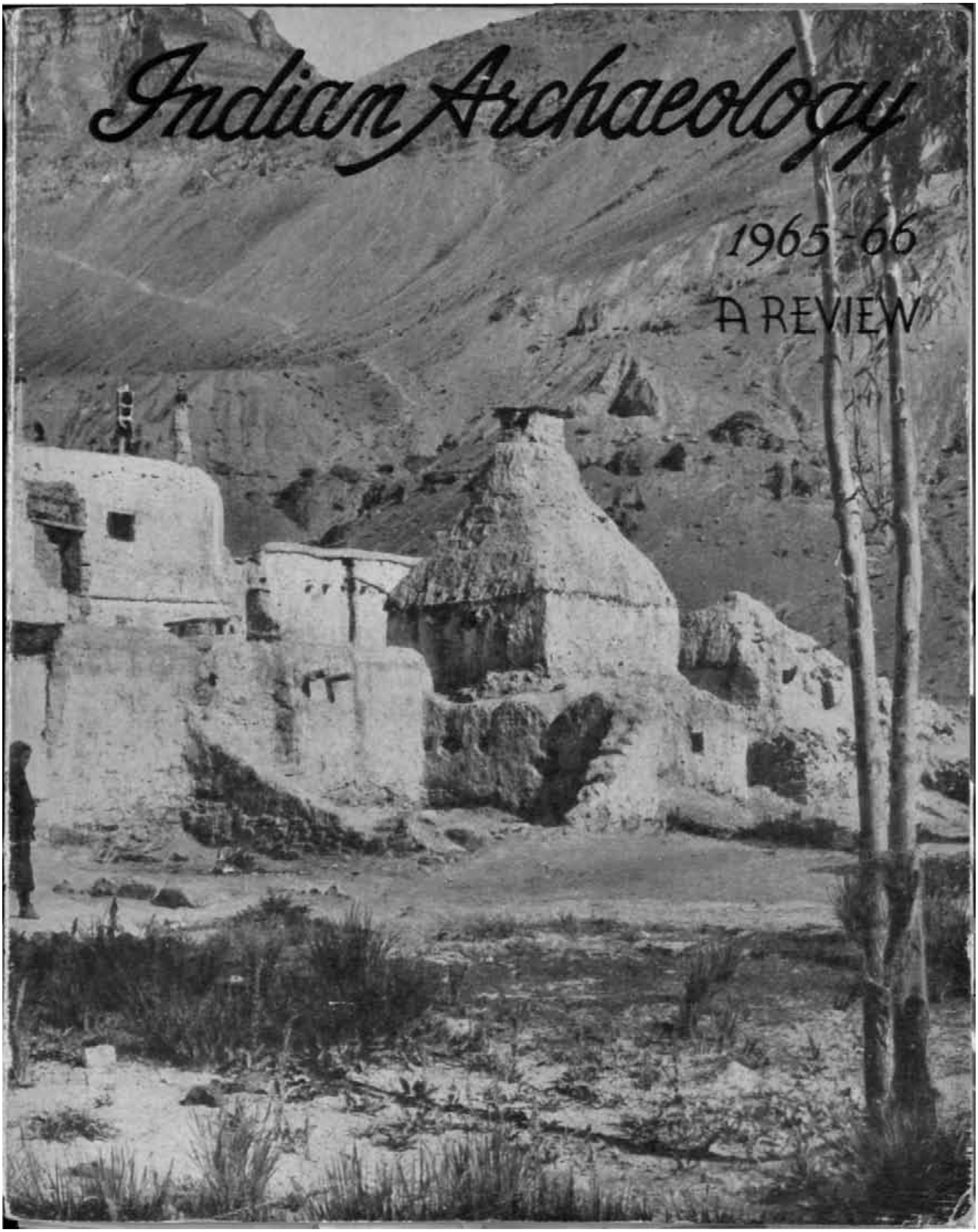

Indian Archaeology
1965-66
A REVIEW

INDIAN ARCHAEOLOGY 1965-66
—A REVIEW

EDITED
BY **A.
GHOSH**
Director General
Archaeological Survey of India

ARCHAEOLOGICAL SURVEY OF INDIA
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1973

Cover:

Tabo monastery, District Lahul and Spiti. The Buddhist *gomphas*, built out of mud-brick and pressed clay, preserve specimens of excellent paintings of *circa* eleventh century and later reminiscent of the Ajanta tradition. See p. 36.

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CONTENTS

PREFACE

It may be recalled that in the Preface to the *Review* for 1964-65, which was published in 1968, Shri A. Ghosh, the then Director General,, wrote that it was the last number edited by him. Yet, before he actually laid down the reins of his office, he could snatch time to sec through the manuscript of the present number of the *Review* which bears the stamp of his able editorship. On me has devolved the pleasant duty of sending the work to the press and its release indeed marks a significant step in clearing the backlog.

I am glad to acknowledge the help given to me by all the contributors to this *Review*, who are responsible for the factual information as well as for the interpretation of the data furnished by them. I am also thankful to my colleagues, Sarvashri B. K. Thapar, B. M. Pande and S. R. Varma for the pains taken by them in seeing the work through the press.

M. N. DESHPANDE

New Delhi February
15, 1973

INDIAN ARCHAEOLOGY 1965-66

—A REVIEW

I. EXPLORATIONS AND EXCAVATIONS

ANDHRA PRADESH

1. EXPLORATION IN DISTRICT ANANTAPUR.—Shri V. R. Reddy of the Deccan College Post-graduate and Research Institute, Poona, explored the District and discovered Late Stone Age sites at: (i) Anantapur, a little west and south-west of the Police Training College, by the side of the right bank of a seasonal stream called Nadimi-Vanka; (ii) Dorigal, located on the northern bank of Maddileru river, about 64 km. south-east of Anantapur and 10 km. north-west of Anantapur-Madanapalle road; (iii) Tadpatri, about 53 km. north-east of Anantapur on the southern bank of the Penner river and l£ km. east of the great temple of Sri-Ramalingeswaraswami; and (iv) Udiripikonka, about 34 km. north-west of Anantapur on the road to Bellary, in a locality called Musalammachenu, and close to the southern bank of a perennial stream called Marri-Vanka. One hundred and eight artefacts comprising cores, flakes, blade-flakes, lunates and scrapers were collected from these four sites.

Besides, two other Late Stone Age sites—Bogasamudram and Muchukota, both in Taluk Tadpatri, the first lying about 13 km. north, and the second 16 km. south of Tadpatri, were also visited. These sites were originally explored and reported by Robert Bruce Foote, who, however, had not given the exact location of the former site and had treated it as unimportant. The present survey was made about \ km. east of the village, on the right bank of the perennial stream Bugga-Venka, a tributary of the Penner river, in the *inam* land of Anjaneyaswami of Bogasamudram. The site covers a large area and yielded two hundred and twenty-two artefacts including cores, flakes, blades, a fine point and scrapers.

In addition, twenty neolithic sites and two ash-mounds were also discovered. Further, eleven sites, reported earlier by Foote, were revisited for making fresh collections. In the former group, five sites were found to possess ash-mounds by the side of neolithic settlements, while two others consisted only of ash-mounds. More than sixteen hundred implements comprising celts in various stages of manufacture, adzes, axe-hammers, chisels, hammer-stones, grooved hammer-stones, fabricators, pounders, hammer-ram-rubbing stones, rubbers, slings, scrapers and flakes were collected. Nearly a thousand microliths were also obtained from these sites.

The pottery associated with these neolithic tools consisted chiefly of grey ware, both burnished and unburnished, and ranging in colour from pale to dull-grey. Some of it was ochre-painted. Besides, a few sherds of the perforated grey ware were also found. Other

fabrics in this assemblage included buff, brown-and-black, red and black-and-red wares. A solitary sherd of a black-painted red ware from the Katamadevndu hill deserves special mention.

A table listing the names of neolithic sites and ash-mounds is appended below, i he sites originally discovered by Foote are marked with asterisks.

Site	*Taluk*	*Location*
Akkammakonda	Kalyandrug	About 2 km. NE. of Kalyandrug
Andepalli	—do—	About 22 km. SE. of Kalyandrug
Budagavi Hill	Urarvakonda	About 55 km. NW. of Anantapur
Buthamahal Hill	—do—	------do-------------------------
Chinna- Dandukonda	Anantapur	About 20 km. NE. of Anantapur
Donekal North-east	Uravakonda	About 20 km. W. of Guntakal
Gadekal South-west	—do—	About 15 km. W. of Guntakal
Gadekal North-west	—do—	About 15 km. W. of Guntakal
Gulapalyam	—do—	About 22 km. NE. of Uravakonda
Havaligi*	—do—	About 67 km. NW. of Anantapur
Hulikal	Kalyandrug	About 10 km. NW. of Kalyandrug
Idukal	—do—	About 5 km. W. of Kalyandrug
Kalyandrug Fort	—do—	About –1/2 km. W. of Havaligi
Karakumukkala	Uravakonda	About 5 km. S. of Vidupanakal
Katamadevudu Hill*	Dharmavaram	About 21 km. SE. of Anantapur
Kunduripi	Kalyandrug	About 30 km. SW. of Kalyandrug
Lattavaram Hill*	Uravakonda	About 51 km. SW. of Anantapur
Mallappakonda	—do—	About 56 km. NW. of Anantapur
Mallapuram	—do—	About 68 km. NW. of Anantapur
Mallipalli	Kalyandrug	About 12 km. SE. of Kalyandrug
Mudigal		About 5 km. E. of Kalyandrug
Peddadandukonda*	Anantapur	About 20 km. NE. of Anantapur
Pallavoy	Kalyandrug	About 8 km. SE. of Kalyandrug
Pillalapalli	Kalyandrug	About 12 km. NW. of Kalyandrug
Rayadrug	Rayadrug	About 90 km. W. of Anantapur
Uidupanakal West*	Uravakonda	About 70 km. NW. of Anantapur
Uravakonda*	Uravakonda	About 53 km. NW. of Anantapur
Vajrakarur*	—do-	About 58 km. N W. of Anantapur and 16 km. S. of Guntakal
Vantareddipalli	Kalyandrug	About 25 km. SE. of Kalyandrug
Velpumadugu*	Uravakonda	About 73 km. NW. of Anantapur
Vidupanakal Fort*	—do—	About 70 km. NW of Anantapur
Vitlampalli	Kalyandrug	About 10 km. NW. of Kalyandrug
Yatakal	—do-	About 9 km. SW. of Kalyandrug

(Sites at Andepalli, Hulikal, Mallapuram, Mudigal and Pallavoy have ash-mounds in addition to neolithic habitation-deposits while those at Mallipalli and Vantareddipalli are only ash-mounds. Of these, the sites at Andepalli, Gulapalyam, Hulikal, Katamadevudu, Mudigal, Pallavoy, Pillalapalli and Velpumadugu seem to be quite promising and as such deserve further investigation)

Megalithic pottery consisting of all-black and brown-and-red wares were found at Andepalli, Gulapalyam hill and Mudigal. Early historical pottery was picked up from Gadekal, Gulapalyam and Kunduripi.

2. EXPLORATION IN DISTRICT GUNTUR.—In the course of an exploration in the District, Shri Mohd. Abdul Waheed Khan, Director of Archaeology and Museums, Government of Andhra Pradesh, discovered a Buddhist *stupa* near a small hamlet called Kesanapalli in Taluk Palnad, about 1.60 km. from Dachepalli, on the main road leading from Macherla to Guntur. About 200 m. on the western side of the village, he located a mound strewn with potsherds, brick-bats and fragments of stone slabs. Removal of the superficial debris revealed vestiges of a *stupa* (pl. IA) enclosed by a brick wall on all the four sides. At the cardinal points of the platform, remains of steps were also noticed. The platform measures 7x7 m. and was found paved with rectangular limestone slabs carved with lotus figures and bearing inscriptions in early Brahmi script (pl. IB). By the side of the slabs, a *Buddha-pada,* carved on a rectangular slab measuring 49 x 42 cm. was also noticed. The margin of the slab was carved with scroll of acanthus and rosettes. The foot-print shows important symbols like *triratna, svastika, srivatsa, ankusa* and elliptical objects, meticulously carved in low-relief. Another interesting panel, crescentic in shape, represented a vase carved on the model *of srivatsa,* from which sprout lotus-flowers in full bloom inter spaced with rosettes, volutes and fish. This slab is elegantly carved in early Amaravati idiom and bears an inscription in early Brahmi script reading *Therasa ayapura devasa cha amtevasikasa cha Ayabadhakasa cha danam.* Two structural phases of the *stupa* could be identified, the earlier of them being assignable on palaeographical grounds to *circa* second or first century B.C.

From the same area an octagonal *ayaka-column,* bearing an inscription in four lines, was also collected. The inscription is in Brahmi characters of the early third century A.D. It records the dedication of the column in the thirteenth year of Chamtamula, who has hitherto been known only from the inscriptions of his successors.

Adjoining this *stupa* on the southern side, two oblong rooms were noticed which, after excavation, were found to be rectangular on plan. The main entrance of one of these was paved with a large *chandra-sila,* and bore an inscription reading: *parachasa bhadakarikasa danam,* giving the name of the donors of the slab.

3. EXPLORATION IN DISTRICT KURNOOL.—In continuation of his last year's work *(Indian Archaeology 1964-65—A Review,*[1] p. 3), Shri V. R. Reddy of the Deccan College Post-graduate and Research Institute, Poona, discovered a Late Stone Age site at Kolimigundla in Taluk Koilkuntla, about 60 km. south of Koilkuntla town and about 29 km. north-east of Tadpatri. The site is an open rocky strip of waste land with a sparse growth of stunted shrubs, lying about \ km. south of the village on the Koilkuntla-Tadpatri road. One hundred and sixty-six implements were collected. These consisted of cores with one, two and three platforms, core-rejuvenations, utilized and unutilized flakes, blade-flakes, scrapers and chips made on jasper, chert, pisolitic chert, quartz and chalcedony.

In the course of his exploration Shri B. Raja Rao, of the South-eastern Circle of the Archaeological Survey of India,[2] found an ancient mound, situated to the south-east of Racherla, a village about 10 km. north-east of Giddalur, and collected black-slipped and

[1] This publication is referred to in the following pages by the year only.

[2] The Archaeological Survey of India is referred to in the following pages as the Survey.

red ware sherds of the early historical period. He located another mound to the west of Taticherla village of the same Taluk and obtained Black-and-red Ware. He noticed temples of the Chalukyan style at Daddavada in Taluk Giddalur and Nandipadu in Taluk Koilkuntla.

4. EXPLORATION IN DISTRICT MAHBUBNAGAR.—Shri B. R. Prasad of the Deccan College Post-graduate ware sherds of the early historical period. He located another mound to the west of Taticherla village of the same Taluk and obtained Black-and-red Ware. He noticed temples of the Chalukyan and Research Institute, Poona, discovered megalithic dolmenoid cists at Chagatur, about 18 km. south-east of Alampur. At Gondimalla, about 10 km. south-east of Alampur, stone-circles were located.

5. EXPLORATION IN DISTRICT NELLORE.—Shri B. R. Prasad of the Deccan College Post-graduate and Research Institute, Poona, discovered an early historical site, showing remains of a Buddhist *stupa*, at Chandavaram, in Taluk Podili, lying about 9 km. west of Donakona railway-station. A little east of this site on hillocks were found a *stupa* and four apsidal-shaped *chaityas*. Around these remains were found loose sculptures. All around the side were noticed traces of walls and heaps of brick debris.

Pottery of the Megalithic Black-and-red and plain red variety, occasionally bearing stamped and incised designs, was collected from the site.

Shri T. S. R. Murthy of the Deccan College Post-graduate and Research Institute, Poona, in the course of his exploration in the District, discovered forty-five Early and Middle Stone Age sites (shown below in the table). Stratified deposits were recorded at Dondolugollapalle, Induru, Inukurti (Kandleru river), Marellagunta (Venkatagiri-Eru-nullah), Mittatmakuru, Pagadalapalli, Peddagopavaram (Chekkalavagu and Nallavagu nullahs), Nellore (Dodlavagu nullah), Racharlapadu (Boggeru river) and Venkatagiri.

General stratigraphy in the nullah-systems of Nellore is as follows (from bottom upwards): gravel; silty sand; gravel and sandy silt.

Of these, the site at Nellore had been visited earlier by Dr. Manley and that at Peddagopavaram by Dr. Zeuner. The present exploration yielded many more new sites in different environmental conditions such as near hill-tops (Panchalingala-kona), sandy soils (Khaderpur), laterites (Nellore town), springs (Akilivalasa) and forests (Gundagulu).

Site	*Taluk*	*River*	*Tool assemblage*
Akbarabad	Kavali	Penner	Early and Middle Stone Ages
Akilivalasa	Rapur	Boggeru	- d o -
Allampadu	Udayagiri	Boggeru	—do—
Ambapuram	Nellore	Dodlavagu	- d o -
Chilakapadu	Udayagiri	Boggeru	—do—
Chiramana	Atmakur	Penner	—do—
Chutti	Venkatagiri	Venkatagiri	—do—
Dachur	Rapur	Boggeru	—do—
Degapudi	Venkatagiri	Venkatagirieru	—do—

Site	*Taluk*	*River*	*Tool assemblage*
Dcgapudi Dondolu-	Rapur	Kandlcru	Early Stone Age Early and
gollapallc	Vcnkatagiri	Vcnkatagiri	Middle Stone Ages
Dundigam Ellakaru	Kavali	Penner Boggeru —	—do— —&o— —do-Early
Gonupalli	Venkatagiri	do— —do— Penner	Stone Age Early and Middle
Gundavolu	Rapur Rapur	Kandleru —do—	Stone Ages —do-—do— —
Hasanapuram	Kavali Gudur	Dodlavagu Penner	do-Early Stone Age Early and
Induru Inukurti	Rapur	Venkatagirieru	Middle Stone Ages —do—
Irlapadu Itampadu	Nellore	Kandleru Penner -	- do - Early Stone Age Early
Jangalapadu	Kavali	do— Boggeru	and Middle Stone Ages
Kalichedu	Atmakur	Venkatagirieru	-do— —do— —do-—do-
Kaluvaya Kavali	Rapur	Boggeru —do—	Middle Stone Age
Khadeupur	Atmakur	Kandleru Boggeru	Early and Middle Stone Ages
Kummaragunta	Kavali	Venkatagirieru	—do—
Marellagunta	Udayagiri	Boggeru Bairavla-	—do— —do—
Marripadu	Rapur	konalingalavagu	
Mittatmakur	Venkatagiri	Dodlayagu	
Mudigedu	Udayagiri	Kandleru	—do-Early Stone Age Early
Nandipadu Navur	Gudur Rapur	Venkatagirieru	
Nidigallu	Udayagiri	Boggeru Penner	and Middle Stone Ages
Padamati-	Atmakur	Kandleru	
kambhampadu	Venkatagiri	Venkatagirieru	
Padamatipadu	Atmakur	Kalingi	
Pagadalapalli	Nellore	Venkatagirieru	
Prabhagiripatnam	Gudur		
Racharlapadu	Atmakur		
Rangasamudram	Udayagiri		
Somasila Srikolanu	Kavali		
Veerampalli	Atmakur		
Venkatagiri	Kavali Gudur		
Vyatagiripalem	Venkatagiri		
Yasavaram	Sulurpet		
	Venkatagiri		

During the same survey, dolmenoid-cists were discovered at Kummaragunta, Kuppayapalaem and Velampalli and stone-circles with cairns at Kanlgiri. Cup-marks on the circle-stones were noticed at Akilivalasa, Navur and Prabhagiripatnam.

At Itampadu, Gundavolu and Prabhagiripatnam Shri Murthy found inscriptions in Old Tamil (Grantha) characters.

ASSAM

6. EXPLORATION IN DISTRICT GARO HILLS.—Under the auspices of the University Grants Commission, Prof. M. C. Goswami of the Department of Anthropology, University of Gauhati, undertook an exploration in this District. In the course of his investigation, a number of neolithic sites were discovered, noteworthy amongst which were Rangigir, Selbalgiri and Thusekgiri, situated in the Arbela range in north-western part of the Garo Hills. Nearly eight hundred stone implements of various categories were collected, the more important from Thusekgiri being the chipped stone axes of dolerite (pi. IIA), a locally-available rock. All the implements were heavily weathered. Typologically, these showed similarity with the Hoabinhian tools of South-East Asia. Other tools discovered from the site were: (i) flattish axes of lenticular section, ground at the working-edge, on the under-surface; (ii) crudely-shouldered axes and (iii) nearly cylindrical-shaped chisels. All of these were made of dolerite. A noteworthy find from Selbalgiri was a spear-head.

7. EXPLORATION IN DISTRICT KAMRUP.—Shri S. N. Ratha of the Department of Anthropology, University of Gauhati, carried out an exploration in the Kamakhya hills near Gauhati and discovered a site with neolithic pottery. The pottery (pl. IIB) is distinguished by cord and basket-impressed designs on the exterior. Similar pottery was also found from the adjoining localities of Navagraha and Sarania hills.

BIHAR

8. EXPLORATION IN DISTRICT BHAGALPUR.—Dr. S. N. Sahay, Shri Naseem Akhtar, Shri S. K. Kaviraj and Shri P. N. Sahay of the Department of Ancient Indian History and Archaeology, University of Patna, surveyed the entire area within a radius of about 10 km. on the eastern, western and southern sides of the main *stupa-mound,* locally known as the Dharohar mound at Antichak. The following mounds were located: (i) Chandipur, about 3 km. to the southern side of the *stupa*-mound, yielding tools of the Middle Stone Age from the *nullah* close to the hilly belt; (ii) Lalapur, about 1.5 km. to the north-eastern side of the *stupa*-mound, yielding beads and microliths of chalcolithic assemblage; (iii) Malakpur, about 1.5 km. to the south-east of the *stupa-mound,* yielding Late Stone Age tools including blades, points, knife-blades; (iv) Namsukh-Kothi, about 2.5 km. to the north-east of the *stupa-mound* yielding fine variety of Late Stone Age tools including blades, blade-cum -points, knife-blades, scrapers and cores; and (v) Oriup, about 2.5 km. to the west of the *stupa-mound* yielding the Northern Black Polished Ware (abbreviated in the following pages as N. B. P. Ware) and other associated ceramics and chalcolithic pottery as represented by plain as well as white-painted black-and-red ware, noteworthy among the latter being a spouted bowl with an elongated lip, bearing on the inside groups of parallel strokes.

9. EXCAVATION AT ANTICHAK, DISTRICT BHAGALPUR.—In continuation of the previous year's work *{1964-65,* p. 5) the Department of Ancient Indian History and Archaeology, University of Patna, under Professor B. P. Sinha, carried out clearance-work of the north western quadrant of site ACK-IV, in the course of which Terrace II and Terrace I of the

temple were recovered. These terraces were similar to those found last year in the north-eastern quadrant of the same mound. Terrace II being the latest, had two windows, one of which opened to the north and the other to the west. The window to the north had a stone base, over which stone pilasters had been erected. The floor of this Terrace was composed of sand and lime.

The plan of Terrace I resembled that of Terrace I of the north-eastern quadrant and likewise showed a rectangular black stone fixed with the floor on each turning of the Terrace. Towards the northern end, however, a pedestal-like object, made of brick and plastered on its northern face with sand and lime, was noticed. A drain, chiselled out of stone was found on the western end. The bust of a Buddhist deity showing fine grey polish was found from the debris overlying the floor of this Terrace. The ash and charcoal deposit over this floor yielded an inscribed terracotta seal which still remains to be deciphered. The inner as well as the outer walls of Terrace I showed terracotta plaques representing various scenes such as Buddha in *bhumisparsa-mudra, dharmachakra-pravartana-mudra,* Dhyani-Buddhas, deities like Padmapani and warriors and ladies in various postures. In addition, animals like cows and elephants, and birds like parrots, and other decorative themes like *chakra* and *kalasa* were used on the inner wall of Terrace I. The outer wall of the Terrace contained plaques representing Buddhist deities primarily in kneeling postures and folded hands. From the debris overlying the floor of Terrace I pieces of stone sculptures and terracotta plaques were found. The stone sculptures represented Buddha in *bhumisparsa-mudra, dharma-chakra-pravartana-mudra* and *abhaya-mudra,* Padmapani, flying *gandharva,* etc., while terracotta plaques represented heads of various animals such as boars, lions, elephants, peacocks, etc. Noteworthy find among the latter variety was a highly-ornamented terracotta votive *stupa.*

Besides, an iron sickle, a chisel and a few pieces of nails were also collected from the debris overlying the floor of Terrace II.

For further work, cutting ACK-I was extended towards the south. During the course of this work more walls crossing each other at the right angles were noticed. These walls, built over rammed earth, were made of baked bricks laid in the English bond and possibly represent the outer portion of the structure. They very closely resemble the wall belonging to Sub-period I B found in the ACK-II area in 1962. Associated with these was found a floor made of brick concrete. Antiquities found from the floor of this structure comprised a terracotta female head, a few pieces of glass and five iron nails. Pieces of deer-horns were also obtained from a pit sealed by layer 1.

10. EXPLORATION IN DISTRICT MONGHYR.—Dr. R. V. Joshi of the Prehistory Branch of the Survey, and Dr. R. C. Prasad Singh of the University of Patna, re-explored the Bhimabandh and the adjoining area. In this tract, the Man river-bed is heavily congested by large boulders and pebbles, and being the source-region of the streams, nowhere any gravel or silt-sections are developed. Generally, the talus and the river-pebbles were seen resting on the weathered Dharwar shales or phyllites.

Early Stone Age artefacts were picked up from the river-bed and the adjoining banks of this river. The tools, made on grey or pink quartzite, were slightly rolled, but not weathered, and consisted of handaxes, scrapers, flakes, and cores, showing advanced Acheulian characters. Cleavers were conspicuously absent or rare. Some tools were found on the slope near the dam-site at Bhimabandh. Although there were a few specimens which were smaller in size and showed some features of hollow- and side-scrapers and points, made mostly on greenish grey phyllites, on the whole, there does not appear to be any definite industry of Middle Stone Age.

Near the guard's hut, the area locally known as Reha, Late Stone Age tools on crystal-quartz were found on the reddish gravelly soil-surface. The collection contained bladelets, a few crescents and cores. But points and backed blades were comparatively rare. In the same area, six to seven pieces of mace-heads and a celt, made on phyllite rock (one mace-head was on shale), were also found. No pottery was noticed. This appears to be a neolithic site. A terracotta ring-well was also noticed at this site, although its precise chronological position still remains to be determined.

After these observations on the previous-explored sites a traverse was taken on the high hills adjoining the left bank of the Rajjan, not far away from Bhimabandh. On the higher hill-tops are the outcrops of quartzites and phyllites. No river-gravel was noticed at this level. There is, however, a thin layer of reddish soil on which occurs a rubble-spread. A few fresh Acheulian handaxes on pink quartzite were found at this place.

At the lower level, 20 m. above the river-bed, a section consisting of rock-rubble resting on weathered phyllite was seen. At places, boulders of detrital laterite also occur in the rubble. From this level were obtained a few handaxes and smaller tools, mostly flakes and flake-blades on quartzites or phyllites. But here also the tools did not show decisive features of the Middle Stone Age industries, and, for the present, the entire collection will have to be regarded as of Acheulian assemblage.

The occurrence of Early Stone Age industries in the forested hill-tops is an interesting feature, for such localities are extremely rare in this country. The absence, or extreme rarity, of cleavers in the collection is also a peculiar characteristic, because normally in the forested localities cleavers, which could have been useful as cutting-tools, should have been a common tool-type.

Like Bhimabandh, there are a few more villages in these hills having an identical geographical situation. Of these, the Chormara village lies in the valley enclosed practically on all sides by high hills. It is about 15 km. north of Bhimabandh. While exploring this area, a very rich Early Stone Age site was discovered about 5 km. from Bhimabandh, on the left bank of the Teparpani stream, which yielded several Acheulian tools in mint-condition and showing an advanced technique. This appears to have been a factory-site. The section on this shallow and dry stream showed 1-m. thick silt and pebble deposit on the weathered phyllites, overlain by 1/2 laterite, which in turn is topped by 1-m. brown silt.

11. EXPLORATION IN DISTRICT PALAMAU.—Dr. A. K. Ghosh, assisted by Shrimati Ranjana Das and Shri A. N. Basu of the Department of Anthropology, University of Calcutta, discovered for the first time lithic industries in a stratigraphic context near Dhekulia, situated on an elevated plan. The nullah-section reveals the following stratigraphic sequence (from bottom upwards): (i) bed-rock, consisting of granite decomposed at places into granitic gneiss; (ii) gravel-bed 60 cm. thick, with an unconformity between the two beds, gravels of quartz, quartzite, and jasper being angular and ranging from medium to small in size; (iii) bed of yellowish-brown soil (72 cm. thick), residual in nature and containing concretionary materials; (iv) *ghuting*, sometimes intruding into the brown soil, which yields flake-blade industries. The chief raw material is porcelinite rock found profusely in the local outcrops. The types included scrapers, points, blades, knives' burins and awls, together with cores and waste flakes. A noteworthy feature of this industry is the tendency towards the Late Stone Age tradition.

12. EXPLORATION IN DISTRICT PATNA.—Shri B. Narayan and Shri S. K. Kaviraj of the Department of Ancient Indian History and Archaeology, University of Patna, surveyed the entire area within a radius of 1 ½ km. to the northern side of the village Maner, situated about 25 km. west of Patna, on the Arrah-Patna road. The present village of Maner is situated on the mound itself which runs from east to west. In the course of exploration on the northern edge of the mound which overlooks the old bed of the Son, sherds of black-and-rcd ware were found from the lowermost deposit, immediately above the natural soil, represented here by the yellowish compact clay. Among the noteworthy forms obtai ned in this ware were a stem of a dish-on-stand, and a footed bowl. The fabric and form of this black-and-rcd ware showed affinity with those of the chalcolithic phase of Chirand. Equally significant was a single piece of fluted core, the presence of which at the site further lends weight to its chalcolithic character.

The N. B. P. Ware and associated ceramics were collected from the overlying deposit. Besides, a fragment of a sprinkler in red ware, a potter's dabber and a terracotta ball were also collected.

13. EXPLORATION IN DISTRICT RANCHI.—Under the University Grant Commission's project for field-work, Dr. M.M. Singh, of the Department of Ancient Indian History and Archaeology, University of Patna, undertook exploration of the western regions of the District, notably Gumla Sub-division. The area surveyed included the river-valleys of Sankha, North Koel, South Koel and their tributaries, wherein eight Stone Age sites were located: (i) Barwe, 6 km. north-west of Chainpur, yielding tools of the Late Stone Age; (ii) Chainpur, 45 km. north-west of Gumla, yielding tools of the Middle and Late Stone Ages; (iii) Jamatoli, 15 km. to the north of Raidih Police-station, yielding Late Stone Age tools; (iv) Kandra, 30 km. from Gumla, yielding tools of the Late Stone Age; (v) Kurumgarh, 14 km. to the east of Chainpur Police-station, yielding tools of the Early Stone Age along with a single piece of scraper-on-flake of the Middle Stone Age and one each leaf-blade, point, scraper, blade and core of the Late Stone Age; (vi) Nawadih, 25 km. from Chainpur, yielding Late Stone Age tools; (vii) Nawagaon, 6 km. south of Rajadera, yielding handaxes; and (viii) Rajadera, about 30 km. to the north-west of Kurumgarh, on the upper source of the river Sankha, yielding tools of the Early and Late Stone Ages.

Under the auspices of the Prehistory Section of the Department of Anthropology, University of Calcutta, Dr. A. K. Ghosh, together with Shrimati Ranjana Das and Shri A. N. Basu, explored some parts of the Subarnarekha valley in the District. The exploration resulted in the discovery of several Late Stone Age sites. The general strati-graphic sequence along the river-valley begins with the bed-rock, mainly granite and schists, inclined at an acute angle due north-south. At places, the granite is in a decomposed state to form gneiss and gneissic clay. This, in turn, is capped by a gravel-bed. The gravels are mostly angular and graded and are laid in a ferruginous matrix. A few handaxes and choppers, on quartz and quartzite, were obtained from this gravel-bed. Over this bed lies a thick deposit of yellowish-brown soil, sticky in nature, over which rests a layer of *kankar*. This bed is formed of sandy matrix and is interspersed with small angular gravels. The *kankars* are comparatively hard and contain haematite nodules. This layer is succeeded by a thick deposit of brown soil darker in colour and with finer texture than the earlier yellowish-brown soil. The dark-brown soil is very sticky when wet and hard and compact when dry. Over this bed lies a thick deposit of red soil which is capped by recent alluvium.

Late Stone Age tools were obtained from the dark-brown soil. This tool-tradition persisted throughout the deposition of this soil. At places, the tools were found lying on the floor of the brown soil where the overlying red soil had been washed out. The tools were made on chert, cherty quartzite and jasper and included scrapers, lunates, awls, burins and borers, together with cores. They were unassociated with any other objects.

14. EXCAVATION AT KHUNTITOLI, DISTRICT RANCHI.—With a view to finding out the nature of the megalithic burials (pi. IIIA) of the area and to correlating this with the habitation-site at Saradkel *{1964-65,* p. 6), the Mid-eastern Circle of the Survey undertook excavation at Khuntitoli, a hamlet adjacent to the Sub-divisional headquarters of Khunti. The work was conducted under the direction of Dr. S. C. Ray, assisted by Shri A. D. P. Singh of the Mid-eastern Circle and Shri K. S. Ramachandran of the Excavations Branch of the Survey.

Only one megalith was taken up for excavation. Its constructional details were as follows. First, a sufficiently large but shallow pit was dug. Almost at the centre of this large pit, a subsidiary pit was sunk in which the grave-goods including pottery and personal ornaments were placed. After these interments, the whole pit was filled up with earth which rose to form a small tumulus. Over this was placed a capstone. Before hoisting the capstone, seemingly as a final ritual, a few pots were again interred.

The capstone of the excavated megalith was of gneissic (?) granite measuring 2.42 x 2.44 x 0.10 m. It was found to be resting on two small boulders, one at the centre adjacent to the central jar and the other nearabout the periphery on the western half towards south. Thus, between the capstone and the earth-filling, there was a small gap. The capstone did not cover the whole of the pit which was almost oval on plan with a tendency to become circular, and measured 4.20 x 3.80 m. It was irregular and shallow in depth ranging from 15 to 45 cm., the western half being less deep than the eastern half. All along the periphery of the pit were placed jars with lids. The concentration of the jars, was on the south-eastern and north-western sides, where they were found to be almost clustered together. On the eastern periphery, only two pots, a small vase and a deep bowl, were found resting on their sides on either side of a big jar. Nearabout the centre of the pit was another shallow and small depression wherein was found a jar with lid. The western half of the larger pit seemed to have been badly eroded, so much so that many of the jars in that part of the pit were found to be damaged. The area around the central jar was almost empty.

The grave-goods (pl. IIIB) consisted of a central urn with lid placed in a special depression nearabout the centre and about thirty-seven jars in various stages of preservation, the total number of pots including lids being fifty-nine. All the jars and lids were almost of the same shape and fabric. None of these, however, was of the black-and-red ware class. More than half a dozen jars were found to contain human bones, and it may be surmised that the remaining ones may also contain skeletal remains. From a superficial observation of charring, seen on some of the bones, it could be inferred that a post-cremation burial-system was in vogue.

Besides, the burial contained a few beads of agate, coral, red paste, copper and bronze and a copper-bronze bangle. No iron or any other datable object was obtained from this burial.

From the foregoing it could be concluded that the present burial was essentially a post-cremation one and perhaps communal in content, as evidenced by the presence of bones in many jars.

15. EXCAVATION AT BUXAR (CHARITTARVAN), DISTRICT SHAHABAD.—Shri Lala Aditya Narain, working under the general direction of Dr. B. P. Sinha of the Department of Archaeology and Museums, Government of Bihar, resumed *{1963-64,* p. 8) excavation at the protected as well as the unprotected mounds, locally known as Charittarvan.

The excavation revealed three cultural Periods, of which the earlier two were continuous, while the last one followed after an abandonment of the site.

Period I was marked by the presence of the N.B.P. Ware. The types obtained in this Ware included the dish and bowl. Other associated ceramics comprised black, grey and red wares. Amongst other finds of the Period mention may be made of terracotta female and animal figurines, beads of semi-precious stones, bone points and iron implements. The terracotta female figurines were partly hand-made and partly moulded and had special types of applied head-dresses, some of them being crude and all made entirely by hand.

Period II was characterized by the ceramics of the early centuries of the Christian era, represented in such forms as the sprinkler and the typical bowl and jar and terracotta human figurines with Kushan type head-dress, beads and iron objects. In one of the trenches which was at much lower level than the other trenches, no remains of the settlement of Period II were met with. It could be inferred that, some time after the end of Period II there came a heavy flood in the Ganga, which washed away most of the occupational strata. The thickness of the flood-deposit, which probably came in four successive phases, was about 3.20 m. The site seems to have been abandoned thereafter.

Period III, which began after about a thousand years, was distinguished by the occurrence of the medieval Glazed Ware, showing floral designs in blue and red colours. In common red ware, the types represented were the bowl with ring base, carinated *handi,* horizontally splayed-out plate, etc. Other important antiquities included, moulded terracotta animal and human figurines, glass beads and bangles. Several small structures, made of broken and re-used bricks of the previous Periods, were also exposed.

GOA, DAMAN AND DIU

16. EXPLORATION IN GOA.—During the last two seasons, Dr. (Miss) Gritli von Mitterwallner of the Institute of Indology of the University of Munich, Federal Republic of Germany, undertook an intensive architectural servey of the Hindu monuments of Goa, which include not only rock-cut caves, temples, wells and ponds, but also remains of ancient settlements, various house-types of the present age, irrigation-systems, bridges, and fortifications, constructed before the arrival of the Portuguese.

Apart from the one hundred and fifty-one shrines which had been surveyed during the four months of the previous year, four hundred and three Hindu temples were examined this year.

During the course of her investigations and explorations, carried out on a village-wise survey, she discovered a number of medieval Brahmanical sculptures which included images of deities such as Betal, Ravalnath, Kala-Bhairava, Surya, Gaja-Laksmi, Chamunda, Sateri, Maha-Lakshmi, Mahishasuramardini and various types of Kulapurusas, *virakals* and *satikals.* In the northern part of Goa, she further recorded a small image of Buddha at Pernem. In Cottombi (Bicholim), she found a 0.49-m. high seated Jaina *tirthankara,* assignable to the twelfth-thirteenth century. Some of the Brahmanical images, excavated from the *talao* of the temples at Virnora (Pernem), were handed over by her to the Archaeological Museum at Velha Goa.

The exploration also resulted in the investigation of coins, mainly of the past four centuries, found in and around several temples in the northern parts of Goa, and in the discovery, in the south-eastern part of Goa, of an inscribed stone slab, bearing an inscription in Brahmi (in its transitional phase to ancient Kanarese), dating probably to the fifth century A.D.

Some of the temples examined by her were found to have been built entirely of basalt which in Goa had to be transported over large distances to the site of work, the locally-available material being red porous laterite which is unsuitable for carved ornamentation. With the exception of the still-standing temple at Tamdi Surla in District of Sanguem, all these early shrines, built entirely of basalt, had been destroyed in the sixteenth century A.D. Many architectural pieces were found by her around the site of the famous Saptakotesvara temple on the island of Divar. Of these, sixty-two specimens were given over to the Archaeological Museum at Velha Goa. They bear striking affinites with the medieval temples of the Kanarese regions in the western Deccan and, therefore, suggest common architectural schools and inspirations.

The second group of temples of the pre-Portuguese period, which normally are better preserved, were built in the so-called mixed method, using both basalt and laterite stone. In these, basalt was used for the more important architectural elements, such as the door-frames, corner-pillars and ceiling-slabs of the *garbhagriha,* the remaining parts of the temples being built of laterite.

The third group consists of temples built entirely of laterite blocks, applying in many parts of the construction European Christian architectural elements such as barrel-vaulted roofs over their *mandapas,* cupolas of the European type as decorative finials of the *sikharas* and round arched doors to the *mandapas.* The rough laterite stone of the outside and inside walls, which does not render itself easily to minute carving, was covered with a coat of plaster, painted over with the rich red colour of *kau,* into which, when still soft and wet, patterns were cut and filled with a white mass in the way of the so-called graffito-method, resulting in intricate figural and vegetal designs.

GUJARAT

17. EXPLORATION IN DISTRICTS BROACH, PANCH MAHALS AND SURAT.—During the course of an exploration in these Districts, the Department of Archaeology and Ancient History, Maharaja Sayajirao University of Baroda, located ancient mounds at: (i) Gandhara and Chanehvel in Taluk Vagra, of District Broach, yielding material of the early historical period and Rajpura, Taluk Valia of the same District, yielding Late Stone Age tools; (ii) Abhlod in Taluk Dohad, District Panch Mahals, containing temples of pre-Chalukyan period and Zalod in the same Taluk, yielding black-and-red ware; and (iii) Lavet in Taluk Mangrol, District Surat, yielding iron slag and medieval glazed wares.

18. EXPLORATION IN DISTRICTS BULSAR AND RAJKOT.—The Department of Archaeology, Government of Gujarat, in the course of an exploration in the District found: (i) Stone Age tools at Padamdungari near Unai in District Bulsar and at Jasdan in District Rajkot; (ii) Late Stone Age tools at Pal near Rajkot; and (iii) Harappan sites at Babra and Patdi near Anandpur-Chotila in District Rajkot.

19. EXPLORATION IN DISTRICT KUTCH.—With a view to locating more Harappan sites between the already-known sites of Surkotda and Desalpar in Kutch, exploration was

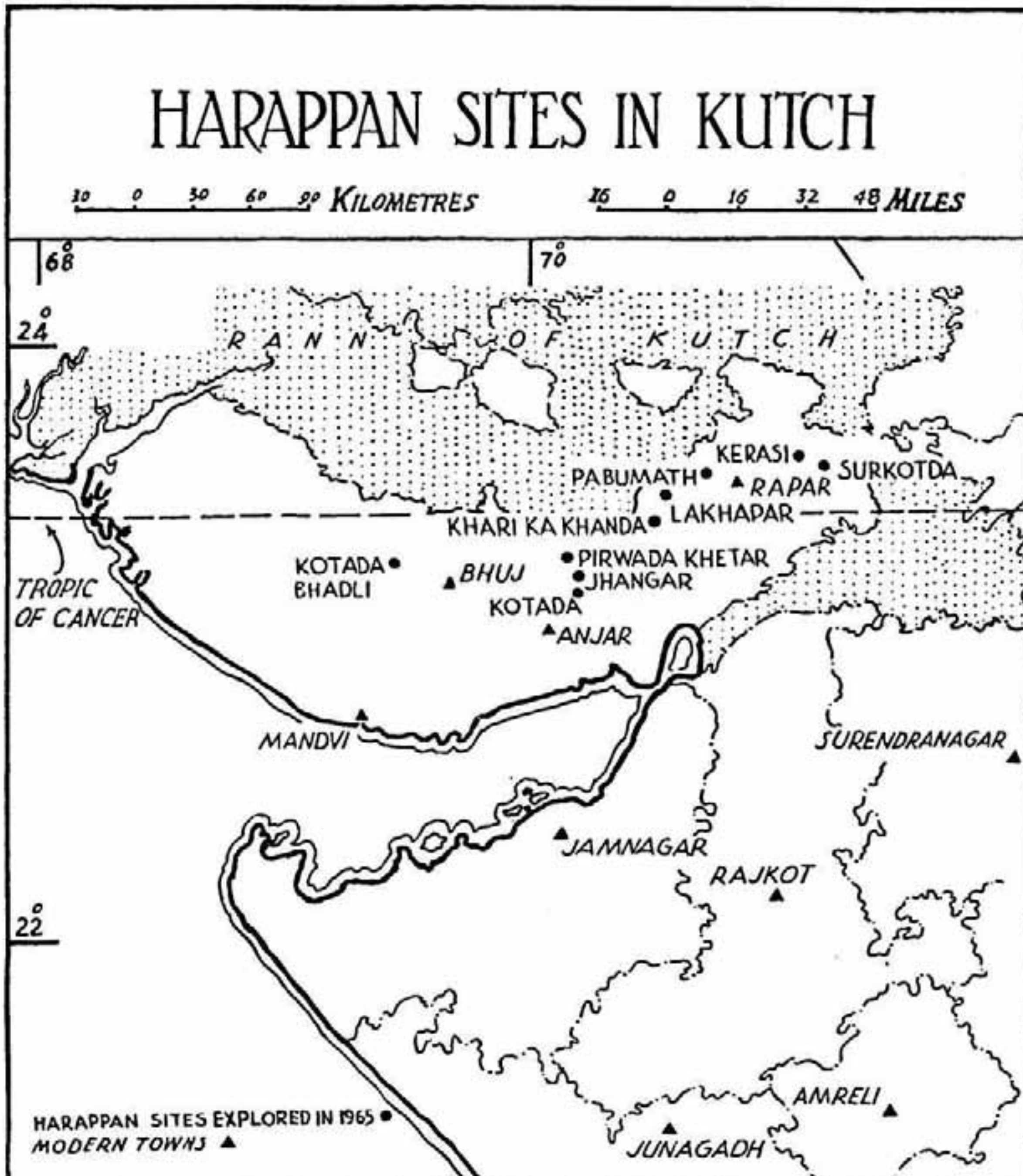

HARAPPAN SITES IN KUTCH
30 0 30 60 90 KILOMETRES
16 0 16 32 48 MILES
68°
70°
24°
22°
RANN OF KUTCH
KERASI
SURKOTDA
PABUMATH
RAPAR
LAKHAPAR
KHARI KA KHANDA
KOTADA BHADLI
BHUJ
PIRWADA KHETAR
JHANGAR
KOTADA
ANJAR
TROPIC OF CANCER
MANDVI
SURENDRANAGAR
JAMNAGAR
RAJKOT
AMRELI
JUNAGADH
HARAPPAN SITES EXPLORED IN 1965
MODERN TOWNS

FIG. 1

carried out by Shri J. P. Joshi, assisted by Shri T. V. G. Shastri and Shri K. P. Gupta of the Western Circle of the Survey. As a result of this work, eight Harappan and twenty-eight historical sites were discovered (fig.l).

The situation of the Harappan sites in northern Kutch, away from the coastline and nearer the Sind region, though separated by the Greater Rann of Kutch, is indicative of a long settlement of the Harappans in the area. This postulation is further supported by the extent of some of these mounds. Noteworthy elements met with at these sites include the occurrence of 'reserved slip' ware (pl. IVA), white-painted black-and-red ware, stud-handled bowls and short blades, and the absence of the Lustrous Red Wares. The existence of the 'reserved slip' ware at some of these Harappan sites offers parallels with early levels of Mohenjo-daro on the one hand and Lothal on the other. The white-painted black-and-red ware was recorded at Surkotda, Pabumath and Desalpar. The Harappan black-painted red ware (pl. IVB) was, however, available everywhere. Some of the shapes (pl.VA and fig. 2) in the plain red ware were comparable to Rangpur II B and II G. A red-slipped cream ware was also found at some of these Harappan sites. Parallel-sided blades on chert and chalcedony (pl. VB) were associated with all the Harappan sites. At none of the explored sites the Lustrous Red Ware was found. Black-painted red ware of the historical period was obtained from many of these sites. The explored Harappan sites arc described below.

Jhangar (lat. 23°19'N.; long.70°05'E.) lies 2 km. to the west of Chandrani in Taluk Anjar. It is an extensive low mound covering an area of about 0-80 sq. km. with 5 to 6-m. high occupational deposit. The site yielded Harappan red, buff and 'reserved slip' wares. The presence of 'reserved slip' ware, painted in black horizontal bands over a grey surface, shows affinity with similar material from Lothal A. Among other finds of this assemblage were cores, flakes, some retouched and used as scrapers, and short parallel-sided blades. Coarse red ware including the painted variety akin to the Rangmahal Ware was also found.

Kerasi (lat. 23°40' N.; long. 70°44' E.) lies 2 km. west of village Gedi in Taluk Rapar. It is a low but extensive mound covering an area of 30-48 sq. km. The ceramic content of this site consisted of Harappan red ware, black-and-red ware of crude variety and a greenish-buff ware. The Harappan types represented in the red ware comprised the jar, bowl, dish and jar-stand. Some bowls comparable to those from Rangpur II were also found. Among other finds, a fragmentary wheel of a terracotta toy-cart and chert blades, including a few retouched examples, were found.

Coarse red were, including the painted variety, comparable in some respects to the Rangmahal Ware, was also noticed. The design repertoire in this Ware consisted of only horizontal bands in black, painted on the interior of the rim.

Khari-ka-Khanda (lat. 23°27'N.; long. 70°19'E.) lies 4 km. east of the village Kadol in Taluk Bhachau. The name of the site itself indicates that it is a salt-waste. The river Khari flows in the rainy season just by the side of the site, which otherwise remains dry throughout the year; as a result the area has considerable salt action. The site has been very badly despoiled by later pits. The ceramic content of this site consisted of Harappan red ware represented mainly by the dish-on-stand, jar and beaker which were mostly salt-affected. Shell bangle pieces and short parallel-sided blades were the other finds obtained from this site.

Kotada (Bhadli) (lat. 23°22'N.; long. 69°26'E.) lies in Taluk Nakhtrana. Here three mounds were located: while Kotada Bhadli II and III were Harappan, Kotada Bhadli I was late Harappan and transitional, yielding profuse red-slipped cream ware and some evolved Harappan shapes. Kotada Bhadli I is situated by the side of the present village of the same name. Kotada Bhadli I and II are quite extensive, each with an area of about

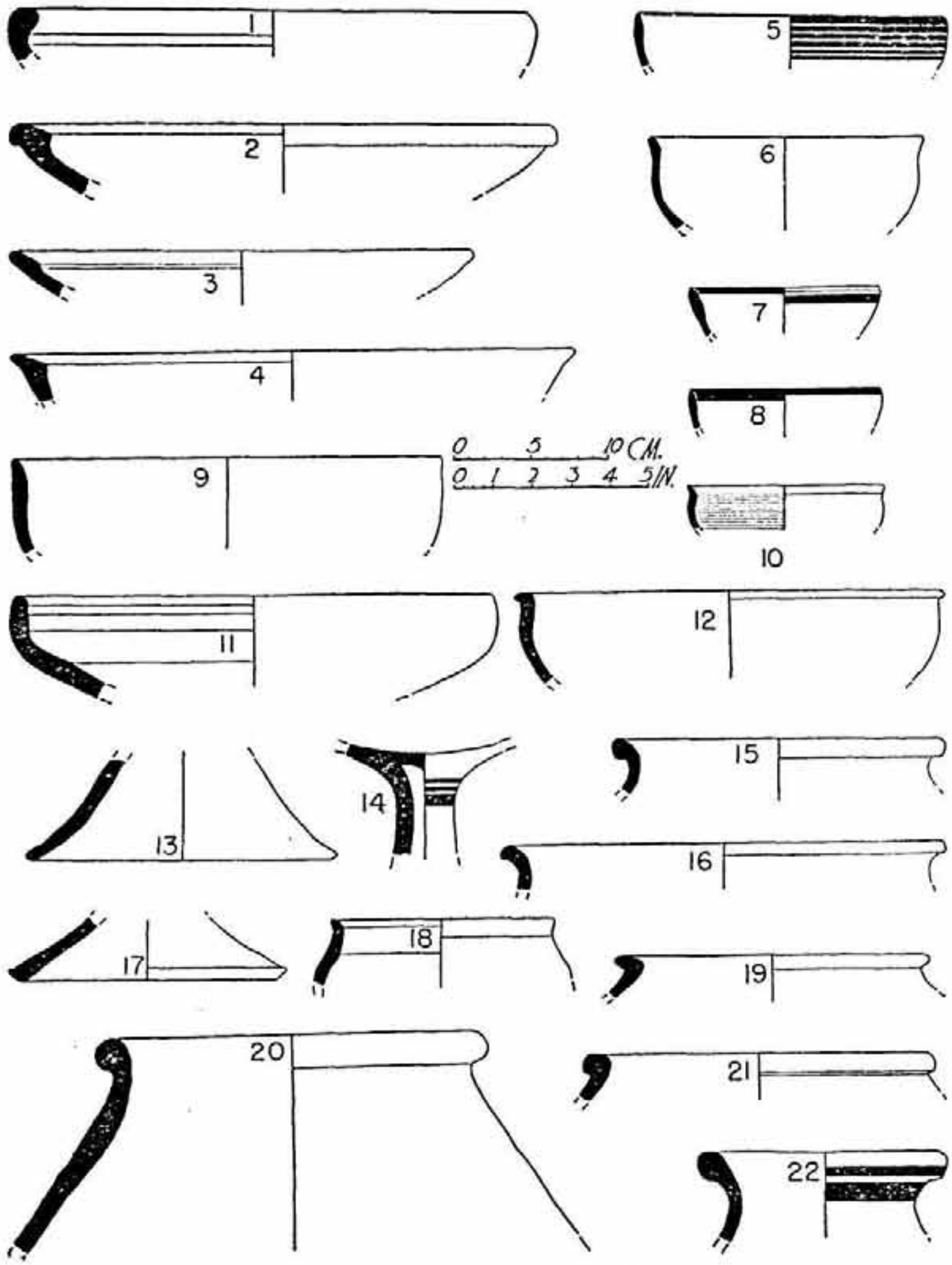


FIG. 2

0.30 to 0.80 sq. km. A rubble-stone fortification in a dilapidated condition was observed at Kotada Bhadli II.

The ceramic content of Kotada Bhadli II and III consisted of Harappan red and buff wares. The former was represented by sherds of the thick sturdy jar, including medium-sized ones, dish, thin convex-sided bowl and perforated jar, and the latter by the jar and dish. In the case of the buff ware it was observed that its exterior surface was occasionally treated with light-red slip. The shapes in the red ware were comparable with Rangpur II. Besides, the site also yielded cores and flakes in chalcedony and chert blades. Some of the cores had been utilized as scrapers. Some sherds of coarse red ware, akin to the Rangmahal Ware, were also available at this site. Kotada Bhadli I yielded red-slipped cream ware with evolved Harappan shapes and a coarse red ware, akin to the Rangmahal Ware.

Kotada (lat. 23°18'N.; long. 70°06' E.) lies in Taluk Anjar. It is an extensive mound cut by a huge rain-gully and has a deposit ranging between 7 and 10 m. On the lower reaches of the mound, large baked-brick walls could be seen on the surface. Though an extensive site, half of it is covered by modern occupation. The ceramic content of this site consisted of Harappan red, buff, black-and-red, 'reserved slip' and red-slipped cream wares. Harappan types represented in the red ware comprised the storage-jar, dish-on-stand, basin, large thick convex-sided bowl, handled saucepan, deep bowl and perforated jar, in black-and-red ware, by the convex-sided bowl and by a fragment of a shallow dish in 'reserved slip' ware. Almost all the shapes were comparable with Rangpur IIA, excepting, however, the bowl in black-and-red ware which, on the other hand, was comparable with Rangpur III. The deep bowl with beaded rim was comparable with Cemetery R-37 at Harappa. Chalcedony flakes and shell bangles were the other antiquities obtained from this site. Coarse red ware akin to the Rangmahal Ware was also found.

Lakhapar (lat. 23°33' N.; long. 70°28'E.) lies 5 km. north-east of Ranavav in Taluk Rapar. Situated on the bank of river Dedvav, the mound is 0.80 sq. km. in area and 5 to 6 m. in height. Being under cultivation, it is constantly damaged by the furrow of the plough. The ceramic content of the site consisted of Harappan red, buff, crude black-and-red and the 'reserved slip' wares. The shapes represented in red ware comprised the medium-sized jar, dish, convex-sided bowl, dish-on-stand and perforated jar and in buff ware, of which a large quantity was found, by the small jar. Black-and-red ware was represented by some crude shapes of late variety. Some of the jars and dishes in the red ware were comparable with Rangpur II A and II C. The 'reserved slip' ware was represented by sherds painted in black with horizontal bands over light-grey background, comparable with similar sherds from Lothal A. A jasper fluted core and a flake and a blade are also worth mentioning. Coarse black-painted red ware, akin to the Rangmahal Ware, and a red-slipped cream ware were also found.

Pabumath (lat. 23°37' N.; long. 7O°31'E.) lies 1 to 2 km. south-west of Jasda in Taluk Rapar. It is a fairly high mound with an occupational deposit ranging from 4-57 to 5-18 m. in height. The eastern periphery of the mound has been considerably damaged due to the canal-cutting which is being connected with the Suvai Dam Project. The ceramic content of this site consisted of Harappan red, buff, black-painted red, 'reserved slip' and coarse red wares. The Harappan types represented in.red ware comprised jars including the perforated one, thick dish and convex-sided bowl, and those in buff ware by the convex-sided bowl. The bowl in black-and-red ware with convex profile is also available. Both in shape and in painted designs, the pottery shows similarities with Rangpur II A, II B and II C. Here three varieties of 'reserved slip' ware were found: (i) painted in black over dark-grey slipped surface (horizontal bands); (ii) painted in red over a light-red surface (wavy

bands); and (iii) painted in chocolate over light-grey surface. Besides, typical Harappan antiquities like parallel-sided chert blades and small blades on chalcedony were also found. Sherds of coarse black-painted red ware, akin to the Rangmahal Ware, and red-slipped cream ware were also met with.

Pirwada Khetar (lat.23°20'N:; long. 70°00'E.) lies 4 km. north of Kotada in Taluka Anjar. It is an extensive but low mound, with an occupation deposit of about 1.30 m., mainly under cultivation. The site yielded a few sherds of the Harappan red ware, represented only by thick sherds of the jar and bowl. The importance of the site, however, lies in the availability of a large number of fluted cores and parallel-sided blades in chalcedony, and one of chert. Other antiquities included a shell bangle-piece. This site seems to be just a camping-place and docs not indicate long and permanent occupation by the Harappans. Coarse black-painted red ware, akin to the Rangmahal Ware, represented by the jar and dish was also found.

A list of the twenty-eight historical sites, yielding a coarse red and a cream-slipped red ware, often painted, is given below.

Site	*Nearest village*	*Taluk*
Ajmel	Khirasar	Anjar
Bhadli	Bhadli	Nakhtrana
Bhojnari	Fategarh	Rapar
Bhombora	Gedi	Rapar
Bhuda-Godh	—	Bhachau
Delsara	Kabrau	Bhachau
Hanumandhar	Fategarh	Rapar
Jagmal-no-More	Chobari	Bhachau
Jhol	Pragpur	Rapar
Jhuran-1	Jhuran	Bhuj
Jhuran-2	Jhuran	Bhuj
Kakarwa	Kakarwa	Bhachau
Kaniabe	Kaniabe	Rapar
Kankhoi	Kankhoi	Bhachau
Khandek	Khandek	Rapar
Khirasar	Khirasar	Anjar
Mandak-Kuva	Desalpar (Gedi)	Rapar
Mekpar	Mekpar	Bhachau
Moda	Moda	Rapar
Morjhar	Morjhar	Nakhtrana
Padhardo	Pragpur	Rapar
Palanswa	Palanswa	Rapar
Pandhrol	Pragpur	Rapar
Pathrod	Jesada	Rapar
Pirtalavadi	Kotada	Anjar
Santhal-Sari-ki-Rod	Chobari	Bhachau
Sutrasaria	Manfara	Bhachau
Ukedo	Sanwa	Rapar

20. EXCAVATION AT MODHERA, DISTRICT MAHESANA.—With a view to finding out the original platform of the Sun temple at Modhera, Shri J. P. Joshi of the Western Circle of the Survey, assisted by Sarvashri T.V.G. Shastri, K.P. Gupta and K.D. Tripathi, undertook excavation around the temple. The excavation revealed that the temple had been built over a 4-m. high platform made of bricks', brick-bats and earth, the upper portion of which was found to have been washed away. This platform had a retaining-wall in the northern and western sides which have now been completely exposed; the position of the retaining wall in the southern side could not be determined.

On the northern side, the brick retaining-wall of the platform had a regular veneer of ashlar-stones, available in two to six courses up to a length of 21.2 m., after which it was found to be missing till the south-western corner. On this side, a later addition consisting of a structure built of stones and bricks was also found. The north-western corner of the retaining-wall, where it took a turn to the west, had two successive brick revetments, 0.70 m. in width, which indicate repair-work in two phases, warranted by the damage caused by the river flowing near by. Slightly farther north on this side, an 80-cm. wide wall was found running east-west to a length of 17 m. in an oblique angle, which indicates additional constructional activity in the area. The exact nature of this wall, however, could not be determined.

On the western side, there was an 80 m. long retaining-wall (pl.VI) with 25 courses of bricks. No regular ashlar-veneer was found except a few stones in the north-western corner. A platform measuring 82.20 m. towards the west and another, measuring 13 x 1.45 m. in the south-western corner, with a farther westward projection, constructed of bricks and huge stones, seem to be later additions to the retaining-wall of the western side.

On the southern side of the temple, no revetment or retaining-wall was available. A large number of late structures, mostly for residential purposes, were exposed. In this area, a *stupa*-like circular (pl. VIIA) brick structure (brick-size: 40 x 25 x 5 cm.) having an outer diameter of 5 m. was also found. The inner circular space was neatly paved with bricks.

The basement of the *torana* to the north-eastern side was completely exposed to view. It seems to be a late contemporary of the stone-veneer of the platform.

In a small slit taken between the *hind* and the *torana*, it was revealed that there had been considerable constructional activity. A brick drain (?), running in an oblique north-south direction, was found standing to a height of twenty-nine courses. This structural complex was earlier than the stone facing of the platform and the *torana.*

21. EXCAVATION AT SEJAKPUR, DISTRICT SURENDRANAGAR.—With a view to finding out the nature of the foundation of the Navalakha temple at Sejakpur, Shri J.P. Joshi of the Western Circle of the Survey, assisted by Sarvashri T.V.G. Shastri and K.P. Gupta, carried out a small-scale excavation towards the southern side of the temple. It was revealed that the temple had originally been built over a 3.76 m. high platform. This platform had a brick retaining-wall having a width of 2.08 m., running on this side in an east-west direction, with a veneer of ashlar-stone masonry. Inside, parallel walls, running towards the basement of the temple (pl. VIIB) were found. The space in between was filled with rubble. These walls stood to a height of thirteen to fourteen courses of bricks. The outer edge of the platform with ashlar-stone veneer lay at a distance of 10.58 m. from the basement of the temple. Remains of similar walls were seen on the surface, on the eastern and the northern sides.

JAMMU AND KASHMIR

22. EXPLORATION IN DISTRICT KATHUA.—With a view to investigating Stone Age sites on the terraces of the Ravi and to ascertaining the existence or otherwise of Harappan sites in the Ravi basin, the Frontier Circle of the Survey, under Shri T.N. Khazanchi, assisted by Sarvashri R.K. Pant, Sardari Lai and S.N. Tikkoo undertook an exploration of the District.

At Lakhanpur, four terraces of the Ravi dating back to the Pleistocene period were recognized: Terrace 1 was composed of large boulders capped by pinkish silt; Terrace 2 consisted of smaller and sub-angular boulders covered with a thick mantle of a terrarosa; Terrace 3 recorded two cycles of sedimentation; and Terrace 4 showed one cycle of deposition. A large number of tools were obtained from Terrace 2 at Kurro, Pinyani and Terra. These consisted of pre-Sohan type of huge flakes, rolled and heavily patinated, early Sohan unifacial pebble choppers (pl. VIIIA) and Clactonian and Levalloisian flakes. From Terrace 3, pebble tools and flakes were picked up at Mah and Jagatpur.

The pre-Sohan flakes are large and are of quartzite, heavily rolled and patinated, having unfaceted striking-platform with more than 120° angle. Though the bulbs are flat, the cones are well-developed. The humped dorsal side is unflaked except for occasional one or two small irregular scars. The early Sohan pebble tools are made on quartzite pebbles, unifacially flaked by using the natural plain surface as a striking-platform and obtaining the sharp working-edge across the length of the pebble. Primary flake-scars, which are deep and reach the middle of the pebble, have generally been obliterated by secondary flaking. Typologically, these tools can be grouped as: (i) choppers with round butt and crescentic working-edge; (ii) chopper with pointed butt having irregular working-edge; (iii) rectangular tools with straight butt and working-edge; (iv) smaller-sized pebble tools (from Terrace 3) with round butt and crescentic working-edge.

The tools are associated with three types off flakes: (i) Clactonian; (ii) Proto-Levalio-isian; and (iii) Levalloisian. Clactonian flakes are generally crude having unfaceted striking-platform with an angle of more than 90°, the dorsal side retaining the natural cortex. Levallois flakes are detached from the prepared cores and show a prepared striking-platform having an angle invariably less than 90°.

In the region explored, no protohistoric sites could be located. However, a fortress, built of unhewn rubble-masonry, was found near Lakhanpur. The fortification-wall still retains semi-circular bastions on the outside, its interior having been altered and modified. Besides, ruins of an old palace were located at the top of Terrace 1, locally known as Mahtab Garh. Except for a portion of the eastern and northern side-walls of a room, nothing remains of the palace. These walls contain some paintings, depicting the chief of the locality, Ganesa with flying *gandharvas* and a few love-scenes. The art depicts the stage of deterioration in Pahari School of paintings.

23. EXCAVATION AT BURZAHOM, DISTRICT SRINAGAR.—The Frontier Circle of the Survey, under Shri T.N. Khazanchi, resumed *(1964-65*, p. 13) excavation at Burzahom for completing the plans of rectangular and square pits of Phase I and the structures of Phase II (pl. IXA). Owing, however, to disturbed conditions, the excavation had to be suspended with the result that the objectives in view remained unrealized. During this short season an engraved stone slab (pl. IXB), showing an incomplete pattern was found. It may be recalled that a similar slab, showing a hunting-scene (pl. X) was also found last year. Both these slabs formed part of the rectangular structure of Phase II, already reported earlier *(1962-63,* p. 9).

24. EXPLORATION IN DISTRICT UDHAMPUR.—In the course of an exploration **the** Frontier Circle of the Survey, under Shri T.N. Khazanchi, located many forts and palaces of the eighteenth and nineteenth centuries. With the river Chenab flowing on its flank, the Riasi region consists mostly of wooded hills and hillocks in the south and high mountains in the north, some of which reach an altitude of more than 900 m.

Like other hill-states, this valley abounded in petty principalities which came into existence sometime about the middle of the eighteenth century, following the decline of the Mughal empire and the constant wars between the Afghans and the Sikhs. The explored forts are described below.

The fort at Bhimgarh crowns the summit of a hillock and commands a panoramic view of the valley and the Anji nullah below. The rampart, constructed in dressed stone boulders, is surrounded by a well-built outer wall for strong defence. On plan, the fort is more or less a rectangular structure containing five corner-bastions, guard-rooms near the entrance, a complex of rooms probably serving as barracks skirting a tank in the centre and a small temple. Both the ramparts and the defence-wall seem to have been repaired at various stages. The next storey above the ground-floor is accessible from the entrance, laid out from the internal passage. For the roof of the structure a separate flight of steps has been provided to the right of the entrance.

The rampart has five domed watch-towers which serve as corner-bastions. Excepting the one on the eastern side, these watch-towers are three-storey high. For an assured water-supply in case of a siege, a deep tank was provided within the fort. In front of the tank, near the south-west corner of the rampart, was found a single-celled temple with a stepped pyramidal roof.

Apart from the fort, the remains of an old palace in the town, were also surveyed. A major portion of this, however, has now been reconstructed to accommodate the local offices. Maharaja Ranvir Singh, the son and successor of Maharaja Gulab Singh, the founder of the State of Jammu and Kashmir, made Riasi his summer-residence and adorned the palace with fountains and cypress trees. Fortunately, some of the side-walls and one or two rooms are still existing in their original condition, and show contemporary paintings. While the execution is rather poor, the colour-scheme is of an inferior order. The subjects portrayed include: Mahishasuramardini; Surya and Karttikeya on their respective *vahanas;* Brahma; Vishnu and Siva with their consorts and *vahanas;* Ganesa with Parvati; Siva and Parvati on their mount (pl. XIA); lady alluring a bird from a flower-bush; lady from a window raising her hand at the back and revealing her luxuriant hair; lovers on a balcony; Radha and Krishna and related scenes; Krishna over the balcony; Krishna with *gopis,* etc.

Vijaypur a village situated on the left bank of the Chenab about 3 km. from Riasi, contains the palace of Wazir Zorawar Singh (pl. VIIIB), the ablest general of Maharaja Gulab Singh. The building is a three-storeyed structure. On the first floor, some mutilated paintings were located. The building, commanding unique view of the Chenab and that of the Bhimgarh fort.in the east, must have served the purpose of watch-towers. The enclosure-wall and the main entrance are in a damaged condition

At Batal Gala, located about 16 km. from Riasi at a height of 1020 m. above mean sea-level, was found another fort. This fort is not so massive a structure as at Riasi. The corner-bastions are only one-storey high, the prominent one being on the right side of the rampart and must have served as a watch-tower. The entrance to the fort is from the south. Except for the roofs and ceilings, the entire fortification-wall along with the set of staircases on the interior is in a good state of preservation. There is a separate arrangement for exit

which must have primarily been used for the supply of water from a tank situated at a distance of a few metres to the north of the fort.

At Salal, a small village about 27 km. to the north of Riasi, where the Chenab flowing from the cast takes a bend and flows south, lies a fort built by Maharaja Gulab Singh. By virtue of its location, it must have been a stronghold of some significance. The fort is largely in ruins. The fortification-wall is built of hammer-dressed boulders. To the south of the fort was located a wooden temple commonly known as Chennana-devata. The temple consists of a single square chamber, built on a rubble basement, which also serves as a stepped corridor. The standing columns around the corridor seem to support the roof, of which the beams and rafters have disappeared. The bases of the columns show flowered designs. Within the temple were found wooden sculptures (pl. XIB) representing warlike scenes relating possibly to Dogra wars. Life-size sculptures, carved out of one log, represent warriors armed with swords, spears, arrows and shields. Some of these arc shown to carry skulls in their left hands. About seven such specimens were found in the temple, of which one depicts a man and a woman holding each other's hand. The latter also holds a water-pot in her left hand. The carving shows a poor workmanship.

KERALA

25. EXPLORATION IN DISTRICTS ERNAKULAM, KOTTAYAM AND TRICHUR.—In the course of an exploration in these Districts, Shri K. Chandrasekhara Menon of the Southern Circle of the Survey found: two laterite menhirs at Tirukkakara and five specimens of mural paintings at Durga temple at Cheranallur and Subrahmanya temple in Elankunnapuzha, all in District Ernakulam; urn-burial sites at Marayur, Pambadumpara, Pannivaykara and Sonthanpara, a number of dolmenoid cists at Mannamkandam, eighteen menhirs at Chinnakanal and two copper-plate inscriptions at Peruvanthanam, all in District Kottayam; and fifteen burial-urns at Pullur and some good medieval sculptures in the Krishna temple at Veloorkara, both in District Trichur.

MADHYA PRADESH

26. EXPLORATION IN DISTRICT CHHATARPUR.—Shri Krishna Kumar of the Survey, in the course of his explorations in the valley of the river Khudar, a tributary of the Kon, located nine Stone Age sites near Beniganj, Jatkara, Khajuraho and Sakera. Of these, the site at Jatkara, lying near the Khudar bridge, about 1 km. west of the village, proved to be more extensive and yielded: a unifacial chopper on a granite pebble and an unfinished handaxe on a limestone flake, both belonging to the Early Stone Age; a dozen Levalloisian flakes and various scrapers belonging to the Middle Stone Age; hundreds of Late Stone Age artefacts; some neolithic axes and adzes with pointed butts; a few fragments of sling-balls and some pieces of mace-heads showing incomplete hour-glass section. The Late Stone Age industry consisted of various types of fluted cores, parallel-sided flakes, blades, lunates, trapezes, triangles, points, arrow-heads, borers, scrapers, etc., made on different varieties of the crypto-crystalline silica. The remaining sites yielded mostly the artefacts of the Late Stone Age.

27. EXCAVATION AT TRIPURI, DISTRICT JABALPUR.—The Department of Archaeology, Government of Madhya Pradesh, working jointly with the Deccan College Post-graduate

and Research Institute, Poona, and the Departments of Ancient Indian History and Archaeology of the Universities of Baroda and Saugar, undertook an excavation at Tripuri, already subjected to one season of excavation by the Saugar University under Dr. M.G. Dikshit earlier in 1952. The main objective of this campaign was to compare the earliest civilization of Tripuri with that of Maheswar.

Excavation revealed a four-fold sequence ranging in date from *circa* fourth century B.C. to A.D. 400.

Period I was characterized by the use of black-and-red ware, the N.B.P. Ware and the white-slipped ware. The people lived in houses made of mud-walls and thatched roofs. The floors were found to be plastered with lime.

Period II witnessed a definite improvement in the life of the people. Besides mud, baked brick began to be used as a building-material. The roofs of the houses were covered with terracotta tiles which could be fixed to wooden beams with iron nails. In addition, the houses were provided with sanitary conveniences like ring-wells and soak-pits. Besides the ceramic industries of the preceding Period, a fine-red ware, possibly a table-ware, came into use. During this period, coins also came to be minted, bearing on one side Brahmi letters *Tri-pu-ri*. Other noteworthy objects of the Period comprised decorated grinding-stones, small objects of soapstone, beads and bone points.

Period III was distinguished essentially by its coinage. Instead of Tripuri coins, coins of copper, lead or potin belonging to the Satavahanas and Kshatrapas became current. The ceramics of the Period were marked by the stamped style and the occurrence of the kaolin and the red polished wares. In the latter ware, the typical sprinkler-form was recorded.

Period IV was marked by the characteristic arrow-, spear- and lance-heads. These weapons, unlike those of the preceding Period, had a socket instead of a tang indicative of an improved method of hafting. One of the spear-heads showed denticulated brass ribs on its socket. The use of brass at such an early period (*circa* A.D. 400) and the denticulation are indeed rare features.

28. EXPLORATION IN DISTRICT MANDASOR.—The Department of Ancient Indian History, Culture and Archeology, University of Saugar, under Professor K.D. Bajpai, in the course of an exploration collected black-painted red ware of the central Indian chalcolithic assemblage at Mandasor on the banks of the Shivna river and a chert scraper, belonging to the Middle Stone Age from the river Chambal near Vasai. Besides, a number of stone sculptures of the early medieval period were discovered at several sites in the District: (i) sculpture of the Gupta period representing Rudra-Siva with heavy *jata*, from Khilchipura near Mandasor town; (ii) Padmapani Avalokitesvara with the figure of Dhyani-Buddha Amitabha on the elaborate *jata*, lower part of Buddha's image, seated in *padmasana*, figure of seated Gaja-Lakshmi with a double pair of elephants anointing her, stele depicting the story of king Bali and Vamana incarnation of Vishnu, and Buddha subduing the *nagaraja* Apalata, from Indragarh; (iii) Siva holding a double-faced heavy mace in his right hand and standing in *dvibhanga* pose and images of Varahi and lndrani, Skandamata, Vishnu, Kubera, Vinadhara, Ganesa, Nataraja and Skanda, showing interesting iconographic features, from Bhanpura.

29. EXPLORATION IN DISTRICT SHAHDOL.—With financial assistance from the Univer sity Grants Commission, a small project concerning archaeological remains in the District was undertaken by Shri S.R. Sharma, Assistant Professor in History, Government Post-Graduate College, Shahdol. Under this programme, the river Murna, a tributary of the

Son, was explored to a distance of 10 km. from the vicinity of the bridge on Shahdol-Pali road southwards to the village Pachgaon. From the point of view of finds, three localities along the river-bed arc noteworthy: (i) south of Kalyanpur; (ii) near Lal-Devi and (iii) section about 1 km. south of the bridge on Shahdol-Birsinghpur highway.

About 1 km. from the railway-bridge on the right bank of the river, a 3£-m. high section showed a sequence (from bottom upwards) of sandstone bed capped with a 1-m. thick cemented gravel. The top of this gravel-deposit seems to have been eroded. From this eroded surface, a number of Late Stone Age tools including scrapers and blades were picked up. No geometric tool was sighted. The materials employed are chert and chalcedony.

At a distance of nearly 4 m. from the section cited above, another exposed section was found to contain small rolled pebbles and clay from where a large number (exceeding one hundred) of stone tools, mostly belonging to the Middle Stone Age, were collected. The tools were made of greenish chert, besides a few doubtful ones in quartz. The commonest type was the scraper. Further down the river, a few Early Stone Age tools were also found.

30. EXPLORATION IN DISTRICT VIDISHA.—Shri Krishna Kumar of the Survey, in the course of his exploration in the District, found Late Stone Age tools in the fields adjoining the Udaigiri caves, on the bank of river Bes, a tributary of the Betwa.

31. EXCAVATION AT BESNAGAR, DISTRICT VIDISHA.—In continuation of the second season's work *(1964-65,* p. 19), Shri M.D. Khare of the Central Circle of the Survey carried out excavation at Besnagar. It has now been fully established that the elliptical temple is earlier than the Heliodoros pillar which, in turn, is contemporary with another Vishnu temple, constructed on a raised-platform after the destruction of elliptical temple and was enclosed and strengthened by a rubble retaining wall.

While exposing the pit of the Heliodoros pillar in the previous year, the existence of more such pits in the area was suspected. The present season's work was, therefore, confined to BSN-3 only, where seven more pits were exposed to view, making the total number of pits eight. Seven of the pits, including that of the standing Heliodoros pillar itself, were in the alignment of the rubble retaining-wall, oriented north-south. All these were found to have identical fillings showing alternate layers of laterite and black soil, the number of layers ranging variously from 16 to 20. In certain cases, the lateritic layers contained small stones and pebbles below the thick basal slabs. Although quite a few of the pits have been damaged in the upper levels, they are about 3.30 m. wide at the top, 2 m. in depth, their width being restricted to a little more than 1 m. below the slab, where the alternating layers of filling are also comparatively thicker. Invariably, more than half-a-dozen iron and stone wedges seem to have been placed on the basal slabs to keep the pillars in their respective positions. In certain cases, two slabs were placed instead of one. The pillars were buried to a depth of 1 m. from the ground-level. The distance, from centre to centre, of the pillars measured about 4.25 m. All the seven pits located this year were found to be without any pillar, and their respective cavities, about 65 cm. in diameter, were seen filled up with subsequent deposits. From the nature of the fragments of the pillars found in and around the pits, it seems that they had suffered despoilation through human agencies.

It may be recalled here that a number of pillar-capitals were reported from this site by the previous excavators. These capitals, along with the missing ones, must have adorned the tops of these pillars. Apart from this, they are likely to have religious significance as well, and in all probability might have been inscribed too. It is, therefore, surmised that the fragment of the inscribed pillar, discovered earlier in a street of Bhilsa (Vidisha) town,

belonged to one of the pillars once standing here. This inscribed fragment also makes a mention of *Garuda-dhvaja.* It may not be wrong to suppose that out of the seven pillars in a row, two pillars with Garuda capitals marked the extreme ends; the Heliodoros pillar being in the north and the other in the south.

MADRAS

32. EXCAVATION AT POONDI AND NEYVELI, DISTRICT CHINGLEPUT.—With a view to ascertaining the stratigraphy of the region, Dr. K.D. Banerjee of the Prehistory Branch of the Survey, assisted by Shri K.V. Raman of the Southern Circle, carried out excavations at Poondi and Neyveli.

Poondi, situated on the earlier peneplain, revealed the following stratigraphy (from bottom upwards): (i) basal Sriperumbudur shale; (ii) Iateritized shale *in situ;* (iii) disconformity, marked by uneven surface of the laterite; (iv) sheet-gravel, varying in thickness from 50 cm. to 5 m., depending on the position of the underlying unevenness, and yielding late Acheulean tools; (v) redeposited laterite; (vi) sheet-gravel, primary or redeposited, containing Middle Stone Age tools; and (vii) surface-sterile and sandy soil.

Neyveli, located on a lower peneplain, showed the following stratigraphy (from bottom upwards): (i) Sriperumbudur shale; (ii) disconformity, marked by the uneven surface of the shale; (iii) sterile pebble-deposit; (iv) lateritic gravel containing Middle Stone Age tools; and (v) sterile and sandy surface-soil.

Besides stratigraphy, the excavations indicated two industrial traits: (a) the production of long blades during the Acheulian phase, and (b) the predominance of points in the Middle Stone Age industry, with handaxes and cleavers surviving in insignificant numbers.

33. EXPLORATION IN DISTRICT DHARMAPURI.—Shri B. Narasimhayya of the Southern Circle of the Survey discovered an Early Stone Age site near Kappalavadi in Taluk Krishnagiri and collected handaxes, ovates, scrapers, discoidal cores, etc. In the same Taluk he also located: dolmenoid cists at Balanayanapalli, Jagadevipalayam, Marudapalli, Mittapalli, Moramadugu, Nagamangalam, Nedungal, Nikkalapalli, Sokadu and Sulamalai; other megalithic tombs at Agaram, Bellarapalli, Gudiam, Marakkampatti, Motur, Ompalagutta, Pachchaganapatti and Tevalam and a habitation-site at Tevalam.

34. EXPLORATION IN DISTRICT NORTH ARCOT.—Shri B. Narasimhayya of the Southern Circle of the Survey brought to light an Early Stone Age site at Tirumalai from where handaxes, ovates, discoidal cores, etc., were collected. A neolithic site was also located in the same village which yielded celts and a core of the Deccan trap.

35. EXCAVATION AT KAVERIPATTINAM, DISTRICT THANJAVUR—The Southern Circle of the Survey, under Shri Krishna Deva, assisted by Shri K.V. Raman, continued {*1964-65,* p. 24) the excavation at the monastic site of Kaveripattinamin Melaiyur. One full wing of the monastery, consisting of nine oblong rooms, each measuring 3.10 x 2.40 m. was laid bare. On the south of this row, at a distance of 2.25 m., a long verandah-wall, 33.50 x 3.90 m., was exposed. At a central point, a number of offsets were found in the wall indicating the presence of a common entrance to the monastery. On the north side of the monastery, a long compound-wall was laid bare. Outside this wall, a small but interesting circular brick structure (pl. XIIA) containing the skull, jaw and ribs of an animal of bovine species was found. A few indistinct copper coins, painted

stucco fragments and terracotta images of early medieval period were recovered from the excavation.

36. EXPLORATION in DISTRICTS SOUTH ARGOT AND TIRUCHCHIRAPPALLI.—The Department of Ancient History and Archaeology, University of Madras, in the course of an exploration in these Districts, located a number of early historical sites at Arasankuppam, Devanathapattinam, Kottaimedu, Kudiraimedu, Nattamedu, Nochchikuppam, Sellimedu and Uchchimedu in District South Arcot, and Allur, Cholamparai, Mahalikudi, Perur and Samayapuram in District Tiruchchirappalli.

At Arasankuppam, about 9.65 km. to the west of Cuddalore and at neighbouring village named Nattaveli, some sherds of a non-descript red and thick black wares and a piece of Arretine Ware were found.

At Devanathapattinam, a small fisherman's village near Cuddalore on the sea-shore, some red medieval pottery and few pieces of iron objects were found.

At Kottaimedu, red and grey wares of both medium and thin fabrics, occasionally with black slip, pieces of thick glazed ware and small rolled-out fragments, similar to the Rouletted Ware, were found. Besides, a leg portion of a terracotta animal, three small round copper coins, a large number of iron nails and a long cylindrical shell bead were also obtained.

At Kudiraimedu, situated on an island surrounded by backwaters, pottery of the non-descript and crude grey wares was found. These appear to be remains of very late habitation of fishermen.

At Nattamedu, 9.65 km. south of Cuddalore, on the Cuddalore-Chidambaram road, a good number of weathered sherds of the Rouletted Ware and beads of semi-precious stones, paste and glass and cylindrical glass-like objects in different colours, with holes for threading, were collected. The nearness of the site to the seashore, the occurrence of the sherds of the Rouletted Ware and other semi-precious materials and glass objects in large numbers suggest that this site may prove to be one of the early coastal trade-centres that flourished in south India at the beginning of the Christian era.

At Nochchikuppam, a small fishermen's village on the sea-shore, about 402.33 m. to the north-east of Kunimedu on the Cuddalore-Marakkanam road, pottery of different types, ranging from thick and well-fired variety to medium fabric in grey ware, and a sherd simulating the Chinese Celadon Ware were found. A spherical paste bead was also picked up from the surface.

At Sellimedu, situated on the opposite bank of Nochchikkadu, in an island surrounded by backwaters, a non-descript pottery of the late medieval period was found.

At Uchchimedu, red and grey wares represented in various shapes and showing salt-effect were found.

At Allur, also called Palaiyur, a village about 8 km. north-west of Uraiyur on the Tiruchi-Karur road, ancient pottery and other remains, datable to the early centuries of the Christian era were found. These included black-and-red ware, polished black and red wares of both the slipped and unslipped varieties. On the easternmost part of the mound were noticed urn-burials, all of which unfortunately had been destroyed by the villagers. From a fragmentary urn were recovered pieces of painted black-and-red Ware and plain black-and-red ware, a ring-stand of black-slipped ware and a high-necked miniature pot, also of the black ware. A vessel with long neck and out-turned rim, the interior of the neck and rim having black slip and the exterior having russet-coating with linear paintings, was found with the urn along with a few bone pieces. Adjoining the ancient site is the temple

of Panchavadesvara, an early Chola temple, around which was found pottery of the early period.

At Cholamparai, west of Uraiyur, an ill-fired and unslipped red ware of a very late period was found. Three brick structures, one on the river-section, and the other two on the mound, were located in the area. A very extensive area on the opposite bank yielded the same ceramic industry. A hero-stone and a broken image of Dandayudhapani were found in the area.

At Mahalikudi (Mahakalikudi), a temple of Mahakali was located on its western end. The area around yielded ceramic evidence of the early historical period.

At Perur, a village situated about 6.43 km. to the north-west of Uraiyur, hundreds of cists and urns with or without capstones were found. Many of them were reported to have been despoiled by the local people and the contents removed. Further west of this is an elevated ground which contains nearly four burials of a similar type. Only capstones and the top portion of the dolmens were visible. Pottery of the megalithic complex was found in the area. To the east and south of this area, was located a habitation-site which, though very much disturbed by banana-plantation, yielded ceramics of the early centuries of the Christian era. A dilapidated temple without a deity stands near the mound.

At Samayapuram, a village about 14.48 km. to the north of Tiruchchirappalli, a Siva temple called Bhojisvara belonging to the Hoysala period was located. Sherds of medieval pottery were picked up from the area.

37. EXCAVATION AT URAIYUR, DISTRICT TIRUCHCHIRAPPALLI.—The Department of Ancient History and Archaeology, University of Madras, resumed *{1964-65*, p. 25) excavation at Uraiyur for the second season. This year's work had one principal aim to realize, viz., to ascertain the evidence of floods and waterlogging met with last year in the deposits of Period II. Two fresh trenches were laid out: (i) URY-5, in the open ground in front of the Selliyamman temple and very near URY-4 excavated in 1965, and (ii) URY-6, in the compound of the Uraiyur water-tank, adjacent to the Uraiyur Police-station. Excavation revealed on an average 4 m. thick occupation containing a succession of three cultural Periods. The stratigraphical evidence as well as the associated antiquities confirmed last year's observations.

Period I *(circa* first century B.C. to A.D. fourth century) is characterized by the occurrence of the megalithic Black-and-red Ware and the associated red and black wares. A large number of sherds of the Rouletted Ware were also found from the strata of this Period. Some of the sherds of the Black-and-red Ware and black ware bore painted designs and graffito-marks. Remains of floor-levels with post-holes were also met with.

Period II *(circa* fourth to sixth-seventh century A.D.) is distinguished by the appearance of a new ceramic type, the red-slipped ware. The megalithic Black-and-red Ware of the preceeding Period shows a marked deterioration. Metal objects including gold pieces of a chain, brass toe-ring, antimony-rods of copper and other iron and copper objects were also found. Structural remains of this Period included a 5 cm. thick rammed clay flooring composed of rammed brick-bats, rubbles, etc. The strata belonging to this Period contained alternate deposits of hard clay, sand and pebbles, indicating the occurrence of floods and water-logging at the site, in the second half of the first millennium A.D. It may be recalled that this feature had been noticed last year in URY-4. It is established, therefore, that Uraiyur, the ancient capital of the Cholas, might have suffered heavily from the floods and consequent waterlogging from the adjoining river Kaveri.

Period III *(circa* A.D. eighth to fourteenth-fifteenth century) is marked by the use of a crude ill-fired red ware of late medieval period. Two sherds of the Celadon Ware were also obtained from the deposits of this period. Among other antiquities, mention may be made of beads of semi-precious stones like jasper, soapstone, rock-crystal, terracotta, shell, bone, paste and glass, bangle pieces of glass and shell and terracotta animal and human figurines (pl. XI1B), besides metal objects.

MAHARASHTRA

38. EXPLORATION IN DISTRICTS AKOLA, AMRAOTI AND JALGAON.—Shri B. P. Bopardikar of the Prehistory Branch of the Survey, as a research student of the Deccan College Post graduate and Research Institute, Poona, surveyed a stretch of about 144-84 km. of the Purna river, falling within the above-mentioned Districts, and discovered a number of Early, Middle and Late Stone Age sites, besides a chalcolithic and several early historical ones.

An Early Stone Age site, yielding flake tools like ovates and cleavers and cores on trap, was located on Gang nullah near Manegaon and Changdev limits. These flake tools were picked up from the hard cemented gravel, which, in turn, is overlain by a loose fine gravel, yielding Middle Stone Age artefacts, consisting of points and scrapers on chalcedony and cherty material. The succeeding deposit of light-yellow silt mixed with *kankar,* yielded Late Stone Age implements. Few cores and flakes were also found in the cemented gravel on Rasa nullah, a tributary of the Purna.

Middle Stone Age sites were located at Brahmanwara-Thadi, Deurwara, Garhi, Kural, Kurankhed, Nimbhor, Phupgaon and Tuljapuri in Districts Akola and Amraoti, Changedev, Edalabad, Ghodasgaon and Manegaon in District Jalgaon. The tool-types represented in the collection were points and scrapers made on chalcedony and cherty material and occasionally crystalline quartz.

Late Stone Age tools were collected from the silt at Bairam Ghat, Bhugaon, Brahmanwara-Thadi, Demwara, Kurankhed, Mungsi, Phupgaon, Sangvi, Tondgaon, Tuljapur-Garhi, Turkhed in Amraoti and Akola Districts.

The site at Ritpur in District Amraoti yielded a large number of points, borers, scrapers, cores and flakes on chalcedony and cherty material. The tools show a slight evolution from the Middle to the Late Stone Age. A few tools were also found at Walgaon and Ozarkhed in lateritic gravel. All these sites are situated on the Pedhi *nadi,* a tributary of the Purna.

A number of animal-fossils were collected at Mungsi, Sangvi and Yilki, all situated on the bank of the Purna.

A chalcolithic site, characterized by the painted pottery of the northern Deccan chalcolithic culture complex was located at Tuljapur-Garhi. Early historical pottery was also found on this mound.

Early historical sites yielding red-slipped and black-and-red wares with graffito-marks, etc., were located at Assnegaon, Bahadarpur, Belora, Brahmi-Budruk Man and Chenduk.

39. EXPLORATION IN DISTRICT AURANGABAD.—Shri Krishna Kumar of the Survey, in the course of an exploration in the District, located near the Ajanta caves, on either bank of the river Waghora, an extensive site yielding artefacts of the Middle and Late Stone Ages. The tools were collected from a *murrum*-deposit resting over the local amygdaloid trap-rock. He also found Middle and Late Stone Age tools near the Ghatotkacha cave, on either bank of Pippalakhora nullah and near Tanda in the vicinity of the Pitalkhora caves.

In District Jalgaon, about 1 km. north of Patna Devi Temple (near the Jaina caves) he noticed some cliff-sections, showing alternate layers of silt, sand and gravel. A few Middle Stone Age artefacts, comprising flakes, scrapers and points, on chert, jasper and agate were found *in situ* in a gravel-deposit. From several localities in the vicinity of the temple, some tools of the Middle and Late Stone Ages were obtained from the surface of a *kankar*-deposit.

40. EXPLORATION IN DISTRICTS AURANGABAD AND NASIK.—The Department of Archaeology, Government of Maharashtra, explored a group of three caves at Lodhra, situated on the borders of Aurangabad and Nasik Districts. The collapse of a rock evidently had destroyed many of the caves. In one of them, however, a large but badly-damaged painting depicting an elephant-procession was found. The painting appears to be executed in the Ajanta style but depicts Brahmanical subjects and probably belongs to the ninth-tenth century A.D. The Department also surveyed Brahmanical caves at Gavtala near Pitalkhora and another group of caves at Deoghar near Karla and at Dhangawhan near Kamshet. The cave at Deoghar is a large rectangular hall (10.36 x 7.62 m.) with square pillars for the verandah, and appears to be a late tenth-century Brahmanical excavation. The caves at Dhangawhan contain a ruined *stupa* of about second century A.D. The radius of the semicircular cave is nearly 7.62 m.

41. EXCAVATION AT KAUSAN AND PAITHAN, DISTRICT AURANGABAD.—The Department of Archaeology, Government of Maharashtra, under Dr. Moreshwar G. Dikshit, conducted excavation at Kausan near Paithan as a salvage-work against the proposed dam across the Godavari river. Three trenches, two at Kausan and one at Paithan, were laid out.

At Kausan, it was found that most of the upper deposits, after having been washed away had redeposited as small rolling mounds near the bed of the river. The topmost layer presented fairly reasonable evidence of a culture from the Satavahana times (*circa* 200 B.C. to A.D. 100). The finds consisted of a structure of which only one brick course (size: 60 x 30 cm.) was available. The same stratum contained five ring-wells or soakage-pits, lined with pottery-rings placed one above the other. Other finds included copper coins with elephant and Ujjain symbols, glass beads with lug-collars, cobalt-coloured melon or gadrooned beads, terracotta *bullae* in imitation of Roman coins and very beautiful moulded figurines of kaolin (pl. XIIIA). Immediately below the Satavahana level were noticed two burials, one of which showed a large painted jar with bulbous belly and tall cylindrical neck with flaring rims. The jar was painted with strokes, loops and criss-cross patterns with a creamy slip. A number of vessels with conical mouths and vertical spouts similar to the Jorwe Ware had been obtained earlier from this level. The present excavation, however, yielded only a few fragments of this well-known ceramic.

The excavation at Paithan was undertaken near the Narasimha temple primarily with a view to checking the stratigraphical sequence.

As a result of the exacavation, a four-fold sequence was revealed; Period I *(circa* 300 BC. to A.D. 100) yielded two unique early Satavahana coins of lead with the Gaja-Lakshmi motif and indistinct marks on the reverse. This device is known for the first time in Satavahana coinage. Among other important antiquities mention may be made of glass beads, crystal ear-reels, legged querns, a fine lion-capital in bone or ivory (pl. XIIIB), kaolin figurines, representing a nude goddess and ivory kohl-stick. From the upper levels of the same stratum were recovered small fragments of the N. B. P Ware m a worn condition.

Period II (*circa* A.D. 100-500) revealed that a heavy flood must have threatened the

ancient city of Paithan towards the end of the Satavahana period. Thick deposits of mud and silt averaging a height of 1.22 m. were noticed.

Period III *(circa* A.D. 600-800) contained a portion of a brick temple in a ruined condition. The plinth and *the jangha* were built of extraordinary large-sized bricks. Quite a number of iron objects and a large lump of iron slag were found in its foundation. The temple has tentatively been ascribed to the Rashtrakuta period.

Period IV *(circa* A.D. 1700-1800) was considerably disturbed by the accumulation of debris and construction of later buildings. This level disclosed the presence of an underground chamber of a house (pl. XIIIC), approached by a flight of steps in the walls. These underground chambers were used for weaving a fine gold cloth called *Paithani,* of which Paithan was the largest centre in the Muslim-Maratha period. The pottery of this Period was comparatively crude in workmanship, was badly fired and was generally of the common red variety.

42. EXPLORATION IN DISTRICT DHULIA.—Dr. R. V. Joshi of the Prehistory Branch of the Survey, assisted by Shri B. P. Bopardikar of the same Branch and Shri S. A. Sali of the South-western Circle of the Survey, conducted exploration and excavation at Early Stone Age sites of the Kan river, a tributary of the Tapti. The Tapti river-basin, although rich in Middle and Late Stone Age sites, had not so far yielded Early Stone Age sites of any importance. Besides examining the sites already reported *(1961-62,* p. 32), further work was carried out in the source-region of the Kan valley, and new sites, yielding artefacts of Early and Late Stone Ages were found at Kabar-Khadak-Pada and on the Utavali nullah near Bhondgaon.

With a view to tracing the extent and potential of the tool-bearing deposits, an excavation (pl. XIV) was undertaken on the right bank of the Kan river near Bhadne, and a 14-m. deep section, composed of successive layers of gravel, sand and silt, was exposed (fig. 3). The cutting at the base of the cliff showed brown clay mixed with *kankar* at the bottom, overlain unconformably by sandy gravel with small pebbles. The latter yielded choppers, an ovate and a cleaver showing advanced Acheulian technique.

Similarly, the trench which was dug through the top silt and a fine sand with *kankar* yielded Late Stone Age tools consisting of blades, points, flakes, and cores, mostly on chalcedony and cherty material. The excavation in the middle fine gravel, which deposit was thought as the horizon of Middle Stone Age industries, did not turn out fruitful. On the opposite (left) bank (pl. XVA), which is badly gullied, were seen sections showing pebbly gravel, fine gravel and sand, calcareous tufa and clay. This side of the river proved to be very rich in tools of Early, Middle and Late Stone Ages. Since the later deposits have obliterated the tool-bearing formations on this bank, further work is necessary to understand the stratigraphy and to trace the possible fossil-contents in the calcareous deposits.

The factory-sites around Raygad and Ranala, situated near the outcrops of red trap, yielded late- to post-Acheulian artefacts, consisting of borers, points, scrapers, flake-blades and several cores. This collection shows a close affinity with the Wainganga-A and Wainganga-B types of implements from the Wainganga river in District Chhindwara.

Shri S. A. Sali of the South-western Circle of the Survey, in the course of his exploration in the District, noticed in the cultivated fields of Raypur Bhadgaon, four groups of Stone Age tools ascribable respectively to (i) the Early Stone Age, represented by half-a-dozen tools on trap including choppers on massive cores, (ii) the Middle Stone Age, represented on jasper, (iii) the Late Middle Stone Age (?), represented on jasper and chalcedony

and consisting of irregular and fluted cores, blade-flakes, scrapers and burins, and (iv) the Late Stone Age, represented chiefly on chalcedony.

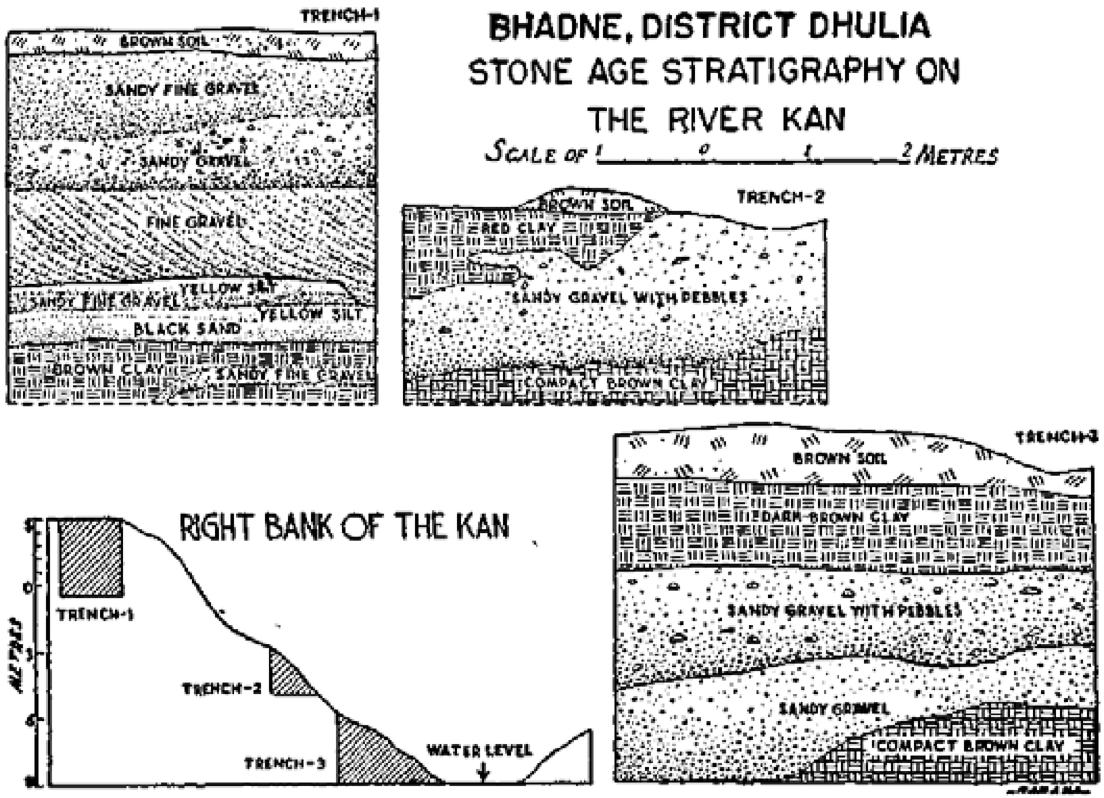


FIG. 3

Early Stone Age tools on trap were also collected from the cultivated fields at Dhavliviharpada and Jamki.

Middle Stone Age tools were collected from the cultivated fields of Bahadar, Dhavliviharpada, Jamki, Selbari and Umbharadi villages. At Bortipada, two cores of jasper were recovered from a gravel. Late Stone Age tools were recovered from the stratified gravels at Bortipada, Brahmanvel and Lonkheda and from the cultivated fields of villages Akhada, Amkhel, Dhavliviharapada, Kudashi, Mapalgaon and Warsha.

Short blades, ascribable to the post-Harappan chalcolithic period, were picked up at -Babhaliapada and Kakasvade. In the former case, the finds were associated with a massive hammerstone of trap.

Chalcolithic burial-sites were discovered at Bhordapada, Bortipada and Brahmanvel.

In addition, temples belonging to *circa* twelfth-thirteenth century were noticed at Brahmanvel.

43. EXPLORATION IN DISTRICT NASIK.—During the examination of the section on the right bank of the Godavari river near Gangapur, Dr. R. V. Joshi of the Prehistory Branch of the Survey, assisted by Shri B. P. Bopardikar, of the same Branch and Shri S. A. Sali of

the South-western Circle of the Survey, found a fossil of a fragmentary mandible of *Bos* along with Early Stone Age artefacts, comprising mostly cleavers, and one or two handaxes, as also scrapers and points, all made on dolcritc or hard columnar basalt. The fossil and tools were recovered from the coarse gravel overlying the basal red clay-deposit (fig. 4). The tools, although patinatcd, were fresh and unrolled, suggestive of their being undisturbed. Perhaps this is the only fossilifcrous and tool-bearing site in the upper course of the Godavari, known so far.

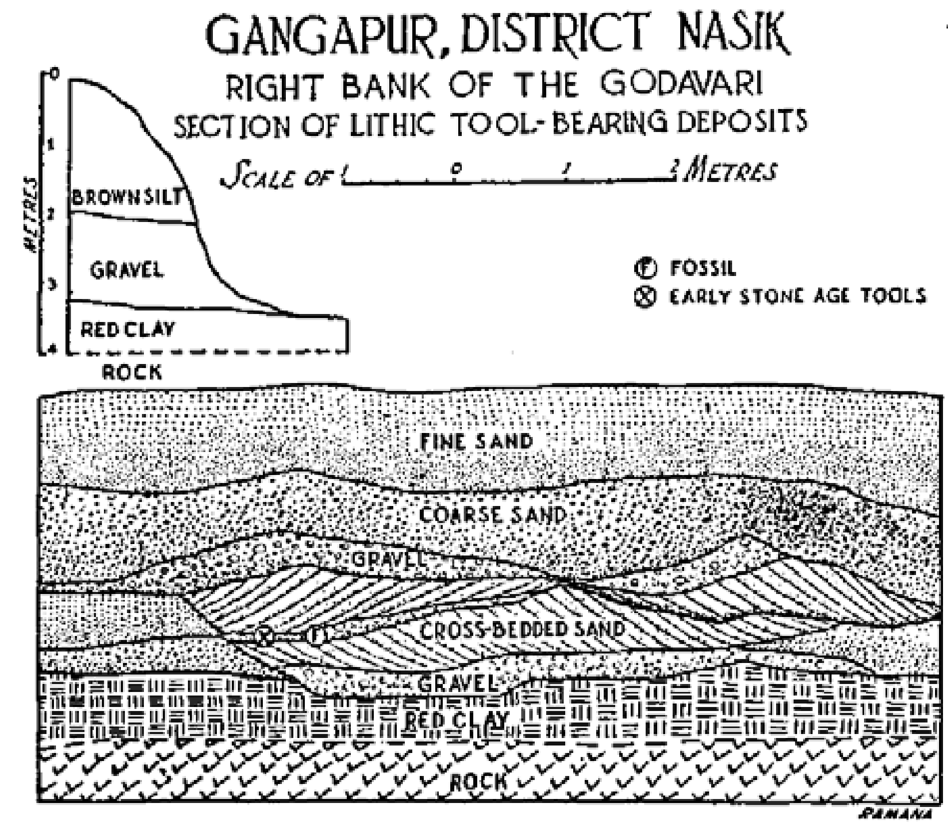


FIG. 4

For ascertaining the occurrence of basal red clay and the spread of the tool-bearing gravel an excavation (pi. XVB) was undertaken at the site. The tool-bearing fossiliferous deposits occur only within the two barriers, one of which is marked by the waterfalls in the north, and the other by the form of rock-cliffs and the dyke that crosses the river. Before the barrier was broken through by the river there must have existed a trough which was receiving the alluvial deposits through a small stream draining into the river from the west.

The excavation revealed a fairly extensive gravel and cross-bedded sandy deposits lying on the red clay and overlain by the dark-brown silt. With a view to ascertaining the extent of the tool-bearing deposits horizontally and for exposing the workshop of living-floor of the Stone Age period, the area bounded by the stream near the water-falls and the section on the right bank deserves vertical digging through the black soil and silt.

While exploring the rivers in this District, following Early Stone Age sites were discovered on the tributaries of the Godavari.

Site	*Riverjhill*	*Tool-industries*
Devla Dhandri	Kolthi Girna	Late Stone Age
Dhondegaon	Kas River South	Middle and Late Stone Ages
Dindori	Hills	
Kalvan	Markhand nullah	Late Stone Age Late Stone Age
Maharpatane	Girna	Late Stone Age
Nakode	Girna	Middle and Late Stone Ages
Vaglud and Krishnagaon	Palkhed Kadva	Middle and Late Stone Ages Late Stone Age
Vambhari (Jalgaon Distt.)	Unanda Girna	Middle Stone Age (choppers and flake) Middle Stone Age

Of these, the Girna and the Kadva rivers need further examination. In the explored portion of the Girna, the region between Maharpatane and Malegaon shows badland features with highly gullied banks. The calcareous tufa is in abundance. This area, therefore, may yield fossils and Early Stone Age industries.

MYSORE

44. EXPLORATION IN DISTRICTS BELGAUM, BELLARY, BIJAPUR, CHITRADURGA, DHARWAR, GULBARGA AND RAICHUR.—In the course of his exploration in northern Districts of the State, Shri A. Sundara of the Deccan College Post-graduate and Research Institute Poona, discovered neolithic-chalcolithic sites yielding parallel-sided blades, flakes of black trap, occasionally with ground surface, black-painted red ware, comparable to that of Brahmagin I A and grey ware etc. at: Nesur, Saptasagara, Satti, Shegunashi, in Taluk Athani, Exsamba, Kallolh and Sadalaga in Taluk Chikkodi, and Haravgeri Kudeni Mugalkhod, Sasalhatti and Yebrati in Taluk Raibhag, District Belgaum- Bilei in Taluka Bilgi, Asangi Chimmad, Hanagandi, Hippargi, Jagdal, Kalhalli, Konnur, Shirguppi and Terdalm Taluk Jamkhandi, Gugalaman m Taluk Hungund, and Terdal Hire Bevanur in 1;aluk Indi, District Bijapur; Puradken in Taluk Hirekerur, District Dharwar; Budihal and Hunsgi in Taluk Shorapur, District Gulbarga; and Gorkul, Karadigudda in Taluk Manvi and 1 avaragera in Taluk Kushtgi, District Raichur.

Among these, the occurrence of (i) a finely-ground sharp working-edge of a stone axe of black trap at Sitimani, Taluk Bagalkot, District Bijapur, (ii) a few potsherds of grey ware of Brahmagiri fabric, parallel-sided blades, fine lunates, etc., at Shidlphadi, near **Ba**dami in Taluk Badami, District Bijapur, and (ii) a large fluted core of chert (9 X 4.3 X 2.2 cm) from the previously-noticed ash-mound at Kodekal in Taluk Shorapur,

District Gulbarga, arc worth mentioning. At Kalhalli and Terdal, huge lumps of scoriaceous ash were found. Some of the black-painted red-ware sherds from the sites in District Belgaum and Terdal arc similar to those from Savalda in District Dhulia in the Tapti valley.

At Asangi and Kalhalli, pottery with a kind of buff or cream or light-grey slip with fine brownish or brick-red core was also found. The types represented in this ware include bowl with flattened edge, vessel with out-turned rim, etc. These wares seem to suggest the intrusion of some elements of an extraneous culture or cultures to this part of the region.

At the already-reported site of Watgal in Taluk Manvi, District Raichur, three adjacent localities, which yielded respectively the neolithic grey ware of Brahmagiri fabric, black-painted red and plain red ware of Jorwe fabric and the mcgalithic black-and-red ware could be demarcated. These seem to suggest the arrival of peoples with the respective wares in succession and their settlements in the respective areas.

A rock-shelter with bruisings and paintings, showing human and animal figures in red ochre, was noticed near the known ash-mound, Vali *Diba* at Venkatapura in Taluk Hospet, District Bellary, and Tavaragera in District Raichur.

Megalithic burials such as dolmens, cists, cairns, cairn-circles, etc., were noticed at: Akkaragal, in Taluk Badami, Chelapur, Gugalamari and Kyadigeri in Taluk Hungund and Chingund, Jagdal and Jakhanur, in Taluk Jamkhandi, District Bijapur; Digehalli, Gaddihalli, Godchanmalki, Gymchimaradi, Hattargi, Honnina Mavanur and Urabanhatti, in Taluk Hukkeri, Tallur in Taluk Saundhatti, District Belgaum; and Tavaragera in Taluk Kushtgi, Gorkal in Taluka Manvi, District Raichur. Megalithic habitation-sites were located at: Salvadgi in Taluk Muddebihal, District Bijapur; Kamalapur in Taluka Hirekerur, District Dharwar; and Hirebenkal and Rajankolur in Taluk Gangavati, District Raichur.

At the excavated site of Brahmagiri in Taluk Molkalmur, District Chitradurga, were found two copper objects consisting of aspiral coil with drumlike ends, similar to that obtained from Tekkalakota, and a part of a small double-edged axe-like object on a thin copper sheet similar to that found from Hallur *(1964-65,* p. 31).

In the course of his exploration in this area Shri K. Paddayya of the Deccan College Post-graduate and Research Institute, Poona, discovered the following neolithic-chalcolithic sites: (i) ash-mound at Budihal, Taluk Muddebihal, District Bijapur, yielding pinkish-red ware, grey ware of Brahmagiri type, black-painted red ware, comparable with A3 variety at Piklihal, a solitary sherd of cream-slipped ware, reminiscent of cruder fabric from Navdatoli, ground stone celts, hammer-stones, rubber-stones and querns, and blade tools of chert, fluted cores, crested-ridge flakes, and parallel-sided blades; (ii) two ash-mounds at Kakkers in Taluk Shorapur, District Gulbarga, Mound I situated at the foot of a range of granite hills and Mound II situated in the cultivated fields just adjacent to the village on its southern side; (iii) Rayangola, in the same Taluk as above, yielding grey ware and blade tools in limited quantities; and (iv) Bandoli, perhaps a factory-site, on the right bank of river Krishna in the same Taluk, yielding a large number of blade tools.

In addition, the well-known ash-mounds at Budihal, Kodekal, Mallur and Thanmandi Thanda, all in the same Taluk, were also visited and material comprising grey, pinkish-red wares, and black-painted red ware, comparable with A3 variety at Piklihal, ground stone celts, hammer-stones and rubber-stones and blade tools of chert with such types as fluted cores, crested-ridge flakes, parallel-sided blades and scrapers, etc., were collected. The ash-mound site at Mallur also yielded Middle Stone Age tools of chert, consisting of scrapers, borers and points.

A neolithic-chalcolithic site with three different localities at Benkanhalli already known for its ash-mound both near Shahpur in District Gulbarga, were also explored. The former yielded grey and pinkish-red wares ground stone celts and blade tools on chalcedony, agate and chert. The tool-types from the latter site comprised fluted cores, parallel-sided blades, lunates and scrapers on chert and chalcedony.

45. EXCAVATION AT HALINGALI, DISTRICT BIJAPUR.—Shri A. Sundra of the Dcccan College Post-graduate and Research Institute, Poona, under the guidance of Dr. H. D. Sankalia, excavated four megalithic burials at Halingali. Among them two main types were recorded: (i) cist with three rectangular courts at the cardinal points and a passage on the south, the composite plan looking like a Greek cross, covered by a cairn, and (ii) circular cist with passage on the south, covered by a cairn with a double circle or a circle and a rectangle.

Megaliths I and II represented stone circles measuring respectively 5.60 and 6 m. in diameter. No cists were found in any of these burials. Besides a few potsherds of the megalithic fabric, these burials did not yield anything.

Megalith ///consisted of a cist of the Greek cross type (pl. XVI A), having pillars along the principal axis and was perhaps one of the largest megaliths in this area. Its enclosing rectangle and the cist measure respectively 11 m. square and 6.50 x 4.75 m. The orthostats of the cist and the rectangle surrounding the cairn were found to be structural walls. A large number of pottery of the usual megalithic fabric, iron objects, etc., and a few fragments of human bones were collected from the burial.

Megalith IV was a circular cairn with three short pillars at the periphery on the west, south and east. From the burial-pit were found small fragments of the neolithic-chalcolithic grey ware and from the south-eastern quadrant, a few sherds of the megalithic red ware.

46. EXCAVATION AT TERDAL, DISTRICT BIJAPUR.—Shri A. Sundara of the Deccan College Post-graduate and Research Institute, Poona, undertook a small-scale excavation at Terdal and exposed two megalithic burials, one each of the types met at Halingali.

Megalith I was a circular cist with a passage to the south (pl. XVIB) and three pillars inside the cist, supporting a capstone. It is covered by a cairn surrounded by a circle and a rectangle. A few sherds of the megalithic Black-and-red ware and plain red ware and some human skeletal remains within a broken pot of red ware formed the grave-goods.

Megalith II was a cist of Greek cross type, buried under cairn-rectangle. There was no pillar inside the cist. A large number of potsherds of red ware and the megalithic Black-and-red Ware and human skeletal remains were obtained from this burial.

With a view to collecting some charcoal samples for Carbon-14 dating, a small L-shaped trench, measuring 4 x 2 m., was laid in the habitation site, about 2 km. away from the burials in question. Excavation revealed an occupational deposit of 65 cm., resolving into three layers. The finds included: a small number of microliths, including a fluted core, flakes with crested guiding-ridge, parallel-sided blades; black-painted red pottery, two of them being of Savalda type; white-painted grey ware; and a considerable quantity of charcoal bits for C-14 dating.

47. EXPLORATION IN DISTRICT MYSORE.—Shri C. Krishnamurti of the Southern Circle of the Survey found megalithic habitation-sites yielding the megalithic Black-and-red Ware at Doddahamma, Hedatale, Suttur and Taradale in Taluk Nanjangud.

A few sculptures of Vishnu in Ganga style were noticed by him at Karya, Nerale Suttur in the same Taluk.

NORTH EAST FRONTIER AGENCY

48. SIVA TEMPLE NEAR PAYA, DISTRICT LOHIT.—Shri L. N. Chakrabarty, Historical Research Officer, NEFA Administration, assisted by Shri R. G. Pandeya of the Eastern Circle of the Survey, excavated the foundation of a Siva temple belonging to the Ahom period.

ORISSA

49. EXCAVATION AT UDAYAGIRI, DISTRICT CUTTACK.—The Department of Archa eology, Government of Orissa, under Shri A. Joshi, Assistant Director of Museums, carried out an excavation at Udayagiri and found miniature *stupas* and a terracotta tablet giving the text of a *dharani.*

50. EXPLORATION IN DISTRICT PURL—With a view to finding out the ancient shrines, the Department of Archaeology, Government of Orissa, carried out an intensive survey in the Prachi and Kushbhadra valleys of this District and located four such temples.

At Bhairangarh, a stone temple known as Madhukesvara-Siva was found. From an Oriya inscription found in its *jagamohana,* it is known that the temple was built of stone during the reign of Gajapati Purushottamadeva (A.D. 1467-96) of Orissa, as the original temple, made of brick by Sri Gopala Chhotaraya, younger brother of Anantabhimadeva, had fallen into ruins.

At Garedipanchana in the Balipatna Police-station, a temple dedicated to Siva known as Buddhanath was found. The temple consists of a *vimana and jagamohana*, the entire upper part of the former and some portion of the pyramidal roof of the latter, notably in the north-east corner, having fallen. On the basis of the *saktis* of the eight *dikpalas* found carved on its body, the temple can tentatively be assigned to the twelfth century A.D.

At Prataparudrapur, near the left bank of the Kushbhadra river, was found the temple of Akhandalesvara-Siva. It contains two Oriya inscriptions of the time of Vira-Nara-Narasimhadeva, inscribed on both sides of the entrance from the *jagamohana.* Not far from the temple stands a life-size figure of a *sannyasi* under a tree, who is popularly worshipped as Jayadeva, the great saintly-poet, whose birth-place was at Kenduli (Kenduvilva) near Prataparudrapur.

At Turintira, near the Pratapasasana-Nimapara road, was found an ancient brick temple which contains figures of Balabhadra, Subhadra and Jagannatha similar to those worshipped in the Ananta-Vasudeva temple at Bhubaneswar. Such images are rather rare and are, therefore, significant.

PUNJAB

51. EXCAVATION AT SUGH, DISTRICT AMBALA.—The Department of Ancient Indian History and Culture, University of Punjab, under Dr. B. Ch. Chhabra, assisted by Shri Suraj Bhan, resumed *(1963-64,* p. 27) excavation at Sugh.

Two trenches, labelled SGH-1 and SGH-2, laid out on the eastern spur of the mound, revealed a succession of two cultural Periods, Period I being further divided into two Sub-periods.

Sub-period I A *(circa* 600-500 B.C.) was characterized principally by the occurrence

of the Painted Grey Ware. Judged from the fabric, shapes and designs as found here, this ware seems to represent a late stage of its existence. Furthermore, from the very start of the occupation, it is associated with N.B.P. Ware. Both iron and copper objects were obtained from these deposits.

Sub-period I B (*circa* 500-100 B.C.) was distinguished by the absence of the Painted Grey Ware, other ceramics of the preceding Period, however, continuing. Remains of brick-built houses, terracotta drain-pipes and soak-wells indicated the urban elements of the settlement. Associated finds included: terracotta figurines (pl. XVII A and D), both human and animal; iron and copper objects; bone or ivory points or styluses (pl. XVIIC); soapstone casket; beads of semi-precious stones, copper and terracotta and punch-marked and Indo-Greek coins in silver and inscribed and uniscribed cast coins in copper. One of the inscribed coin bore the legend *hadasa* in Mauryan characters.

Period II (*circa* 100 B.C.-A.D. 500) was marked by the absence of the N. B. P. Ware and the occurrence of the early historical wares, sometimes decorated with stamped designs. The houses were constructed both of mud and baked bricks. A large number of crucibles attested the existence of a metal-working industry which was represented by a variety of objects of both copper and iron, such as arrowheads, axes, nails, rings and antimony-rods. Among other finds, mention may be made of terracotta figurines both human and animal, terracotta marbles (pl. XVII B) beads of semi-precious stones and terracotta, cast copper coins, inscribed clay sealings, one bearing the legend *Vyagharaja* and the other *Sugha,* both in the third century A.D. characters.

52. EXPLORATION IN DISTRICT AMRITSAR.—In the course of his exploration, Shri Lai Chand Singh of the North-western Circle of the Survey discovered a Painted Grey Ware site at Natthupur-Toda in Tahsil Taran-Taran. Shri Singh also explored Alia, Bharariwal, Deo, Dhunda, Kazarwal and Sirhali Kalan in the same Tahsil and obtained coarse grey, black-slipped and red wares of the Sunga-Kushan types.

53. EXPLORATION IN THE SPITI VALLEY, DISTRICT LAHUL AND SPITI.—The North western Circle of the Survey, under Shri M. N. Deshpande, conducted an exploration in the Spiti Valley, in August 1965, with a view to examining the Buddhist monasteries at Ki and Tabo and assessing their importance and of the paintings contained therein from arch aeological and artistic point of view. He was associated in this project by Shri B. S. Sanyal, Secretary, Lalit Kala Akademi, and Shri J. C. Nagpal, Assistant Archaeological Chemist, Dehra Dun. The party approached the Spiti valley from Manali in District Kulu and moved towards Kaza after crossing the Rohtang and the Kunzum Pass. The journey beyond the Rohtang up to the Kunzum Pass was along the Chandra river while beyond the Kunzum Pass, it was along the Spiti river.

On the way, the party examined the *gompha* at Khoksar which is situated on the right bank of the Chandra river at the foot of a high mountain range. Built of mud-brick, the monastery contained a huge clay figure identifiable as the Buddhist *guru* Nimawasar in its main hall of worship. The *gompha* has been completely renovated in the recent past and does not contain any ancient paintings.

The Ki monastery, about 10 km. away from Kaza, on the upstream side of the river Spiti and situated on a conical hill about 300 m. high from the river bed, was explored in some detail. The monastery is a picturesque pile of buildings looking like a hill-fortress from the distance (pl. XVIII A). A steep climb from the village Ki leads one to the gate of the monastery which consists of several mud-brick structures with glittering pinnacles

atop. At the entrance arc the *gomphas* called Mane-lang and Du-khang. Another part of the monastery known as Nagpo-gurusam, however, contains old paintings which can be dated to *circa* sixteenth-seventeenth century. The paintings cover an area of 5 x 3 m. on the southern wall and extend about a metre above the floor level up to the ceiling. The paintings arc executed on the mud-wall over a thin coat of white ground consisting of lime wash (pl. XIX A). They were observed to be in a bad state of preservation.

Near Kaza there is another monastery known as Tanguit of which a part near the village Kogmi is said to be the winter *gompha.* The walls of this monastery are decorated with paintings. The principal summer *gompha* situated at considerable altitude near the village Ikin is reached by a difficult mountain path. It is about 6 km. from Kaza. The main hall of the monastery, known as *duwang* contains old paintings which arc almost completely obliterated. In the part of the monastery known as *guhang* some old paintings have survived in fragments. The entire monastery has been reconstructed and refurnished in the recent past and has, therefore, lost much of its archaeological significance.

The monastery of Tabo is situated about 58 km. from Kaza further downstream. Tabo can indeed be described as the Ajanta of the Himalayas on account of the paintings contained therein recalling the Ajanta tradition insofar as the colour scheme, composition and line-drawings are concerned. Unlike the Ki monastery it is situated on the plains of the Spiti valley enclosed by a fairly high boundary-wall of rubble masonry and pressed clay (pl. XVIII B). The monastic complex is a picturesque group of mud-brick structures that have defied the ravages of time. The following nine structures, however, are important:

1. Du-wang
2. Zelama (after the painted image of Zelama on the wall)
3. Gon-khang
4. Chamba Chibo (the hall containing the image of Buddha)
5. Dome-lang
6. Lang Chedbo (the big hall)
7. Ser lang (Ser meaning gold and, therefore, a *gompha* with profusion of golden colour)
8. Chil-kang (middle room)
9. Lankar-chung (formerly used for the initiation of nuns)

The oldest and the most important paintings, belonging to the eleventh-twelfth century arc contained in Gon-khang which is the principal *gompha* consisting of a large hall which measures approximately 19 m. x 10 m. supported by eight octagonal pillars. At the farthest end of the hall is the sanctum with the circumambulatory. The hall contains thirty-two projecting stucco figures set on the wall at a height of about 1.5 m. The wall surface is covered with paintings, the southern wall depicting an unidentified *Jataka* story and the northern wall, scenes from the life of Buddha. The figures of the Bodhisattva, celestials and deities are depicted according to the classical Indian tradition while the devotees are shown in their local costumes. The influence of the Kashmir and Pala painting tradition is also apparent. The architectural details depicted in the narrative scenes are also of great interest (pls. XX, XXI A and B). The paintings in this hall have been retouched and renovated from time to time, but large portions of the original paintings are intact and are, therefore, of considerable interest for the study of the art and technique of the Indian murals.

There is also a hill-side monastery partly rock-cut and partly structural. It is, however, in a very bad state of preservation. One of the better preserved *gomphas* contains a painting of the eleven-headed Avalokitesvara of considerable artistic interest (pl. XIX B).

RAJASTHAN

54. EXPLORATION IN DISTRICT BHARATPUR.—In the course of his exploration in the District, the Director, Department of Archaeology and Museums, Government of Rajasthan, discovered the Ochre-coloured Ware, Painted Grey Ware and black-and-rcd ware at Au, Pengore and Sewar. These mounds seem to present the same cultural sequence as has been brought to light at Noh.

At Januthar and Kushana, situated about 5 km. south-west of Dig, the Painted Grey Ware and red ware were found. Another noteworthy find was a broken *saptamatrika* panel, placed on a platform away from the mound.

54. EXCAVATION AT NOH, DISTRICT BHARATPUR.—In continuation of the previous year's work (*1964-65,* p. 34), the Department of Archaeology and Museums, Government of Rajasthan, resumed excavation at Noh. The work was directed by Shri Vijai Kumar, Exploration and Excavation Officer. The main objective of the present season's work was to ascertain further details of the post-Painted Grey Ware settlement at the site, particularly of Period V, assignable to *circa* early second century B.C. to late third century A.D. With this end in view a trench measuring 8 x 7m. was taken up at the top of the mound. Although it was not possible to determine full details of the house-plans, eight structural phases within this Period were duly recognized. The use of baked bricks (size: 39 x 23 x 5 ½ and 29 x 23 x 5 ½ cm.) in the construction of houses was found to be fairly common. Of special interest were a mud-brick structure, a covered drain and well-preserved four-armed and two-armed hearths.

A noteworthy structure was a cistern (size: 50 x 43 x 20 cm.) which was perhaps intended for offering oblations. Its religious use is further confirmed by the discovery of a bone seal in Brahmi characters, reading *pap-nattasa.*

The ceramics of the Period consisted of the wheel-made red ware, normally met with in the Sunga-Kushan levels at many sites in northern India, the common shapes represented being the bowl, lid-*cum*--bowl and lipped bowl. Some of the sherds bore *triratna* and *svastika* symbols, similar to those existing on the comparable pottery from Period IV at Hastinapura. The associated finds comprised: terracotta figurines, both male and female, with elaborate coiffeurs and jewellery; animal figurines, showing the horse and bull; a cast copper coin; a toy-cart; dice; flesh-rubbers; antimony-rods; bangles of shell, glass and terracotta; a potter's stamp; and beads of semi-precious stone and terracotta, etc.

56. EXCAVATION AT KALIBANGAN, DISTRICT GANGANAGAR.—In continuation of the previous year's work *(1964-65,* p. 35), the Excavations Branch of the Survey resumed excavation at Kalibangan for the sixth season. The work, as in the previous seasons, was directed jointly by Sarvashri B. B. Lai and B. K. Thapar. Besides imparting field-training to the students of the School of Archaeology, this season's work had four principal objectives to realize: first, to complete the outline, including structural details, of the Harappan (Period II) fortifications of the southern half of the citadel; secondly, to investigate the nature of occupation, viz., enclosed or open, of the northern half of the citadel; thirdly, to establish the existence or absence of a Harappan fortification-wall around the city-mound; and fourthly, to uncover Harappan house-plans of successive structural phases in a selected area. For the first two objectives, which essentially were a sequel to the last year's evidence, more trenches were laid out along the partition fortification-wall as also along the periphery, especially on the northern, eastern and western sides of the citadel-mound (**KLB-**1).

For the third objective, while fresh trenches were laid out along the north-western periphery of the city-mound (KLB-2), the existing trenches showing the thoroughfares were extended to the outer fringes of the mound both on the southern and eastern sides. Besides, a 1-m. wide trench, connecting the two mounds, was also laid out. For the fourth objective, deep digging was continued in the already-trenched area at the crossing of the thoroughfares.

Last year's work had already established that in Period II the citadel-mound (KLB-1) consisted of two almost equal parts, of which the southern, containing several units of mud-brick platforms, was found to be enclosed by elaborate fortifications. Of this fortification, it may be recalled, full details of the southern and eastern sides and the general alignment of the northern side (of the southern half portion) were known.

During this season, excavation revealed that on the northern side (for the southern part), besides the corner bastions on the north-eastern and north-western ends, of which the outer angles remain largely incomplete, there were two salients, located at well-distributed distances along the entire length. Both these salients were of an almost equal size and projected upwards of 8 m. from the main wall and were on an average 13 m. in width. The more easterly of these (pl. XXII A) stood to an imposing height of 3.60 m. with its outer face covered by a 7 to 10 cm. thick mud-plaster, battered back to an angle of 32° from the base. In its later phase it was reinforced on its inner side by a 1-50 m. wide buttress wall (pl. XXII B) (brick-size 30 x 15 x 7 ½ cm.) built to an angle from the base. The other salient, being more damaged, was available to a height of only 2 m. from the base. Its plastered face, however, did not show the marked batter of the former salient. The fortification wall, of which a stretch of nearly 80 m. was fully exposed, was 6 to 7 m. in width and, as already observed on the southern and eastern sides, showed two main structural phases. Outside the fortification-wall, of which both the outer and inner faces were plastered, was found a brick-on-edge pavement, extending from the north-eastern corner-bastion to the easterly of the two central salients. There is evidence to show that this pavement was renewed at least three times (pl. XXIII) during the life of the citadel. All the successive floorings were made of mud-bricks of the typical size of 30 x 15 x 7 ½ cm.

Entrance to this part of the citadel from the north was through a stairway (pl. XXVII A) which, running along the outer face of the fortification-wall between the two centrally-located salients, led up to the required height, at which passage across the fortification-wall was provided. In this entrance-complex again, two structural phases were recognized, of which the earlier consisted of steps of brick (size: 40 x 20 x 10 cm.; riser, 10 cm. and tread, 40 cm.), and the latter, perhaps of a ramp, screened by a 1.50 m. wide wall (brick size: 30x 15 x 7 ½ cm).

On the western side, a renewed attempt to trace the outline of the Harappan (Period II) fortification-wall, farther west of the already-trenched area of the last year, revealed the existence of a pre-Harappan (Period I) fortification-wall (pl. XXIV A). While exposing its full width, typical Harappan bricks (size: 40 x 20 x 10 cm.) were found well-laid on the outer side, indicating that the Harappans had used the existing pre-Harappan fortification-wall on this side for raising their citadel-fortification. At some places, the eroded face of the existing pre-Harappan (Period I) fortification-wall, up to the height it was exposed, seems to have been reinforced by the Harappans by some sort of a mud-brick revetment. Whereas the alignment of the outer face of the Harappan (Period II) fortification-wall on this side, based at some places on the bottom course alone, could thus be recovered, its inner face and consequently its original width, being insufficiently preserved, remained unknown. The pre-Harappan (Period I) fortification-wall, exposed to a length of nearly 70 m. in the southern half of this side and available to a maximum height of 65 cm., showed two structural

phases. At the south-western corner, the fortification-wall was found to be completely eroded away.

On the southern side, the pre-Harappan (Period I) fortification-wall was exposed to a length of about 35 m. from the south-western end, beyond which distance it was found to have been cut for the foundations of the Harappan entrance-complex (pl. XXIVB), and the salient. The outside face of this wall seems to have originally been plastered with mud, patches of which were still found preserved at places.

The mud-brick platform, partially exposed last year in the north-eastern angle of the southern part of the citadel (Period II), was, on further excavation, found to measure about 25 m. in width. Its full length, falling on the east-west axis, could not, however, be determined beyond the already-exposed 47 m. Two principal structural phases (pl. XXV) could be recognized in its occupational use, the earlier showing 40 x 20 x 10 and the latter, 30 x 15 x7 ½ cm. size.

The platform was separated from the fortification-wall by a passage (pl. XXII B) which was 2.90 m. wide both on the north and the east. On the south, this platform, standing to an imposing height of 3.80 m., was again separated from another platform by a passage, the full width of which still remains to be ascertained. At no point was the platform integral with the fortification. Its face, particularly on the north and the east, was found to be plastered.

Excavation in the northern part of the citadel, outside the bipartite fortification-wall, notably in the area opposite the centrally-located salients revealed, in the upper levels, remains of Harappan (Period II) houses along with such features as storage-jars *in situ*, hearths, terracotta drain-pipes, usual channel-drains of baked bricks attached to bathing-platforms, etc. Although full details of the house-plans could not be recovered, it was noticed that the houses were built well away from the outside face of the partition fortification-wall. Deep digging in the open area in front of the easterly of these salients showed pre-Harappan (Period I) structures running below the fortification-complex (pl. XXVI), including the entrance-stairway.

Since this part of the citadel (in Period II) seems to have been intended for the elite, the existence of a fortification-wall around it could reasonably be presumed. Trenches laid out on the northern periphery of the mound, revealing the existence of a 3-m. wide Harappan (Period II) fortification-wall fully demonstrated the validity of this supposition. This wall was exposed to a continuous length of about 80 m. commencing from the north-eastern corner, full details of which are largely obscured by erosion.

Significantly enough, tunnel-sections at selected places clearly established the existence of the pre-Harappan (Period I) fortification-wall of both the phases (pl. XXVIIB) aligned immediately below the Harappan one (Period II) throughout the exposed length of the latter on this side. The fortification-wall for the eastern and western sides of this part of the citadel still remains to be traced out through further excavation

To recapitulate, the evidence from KLB-1 is as follows. The pre-Harappan (Period I) settlement at the site was enclosed by a mud-brick fortification of which two principal structural phases were recognized on the southern, western and northern sides. The earlier of these, was, on an average, 1.90 m. wide, while the latter, being substantially widened on the inner side, ranged between 3.70 and 4.10 m. wide. The size of the bricks used in both these phases was, however, 30 X 20 X 10 cm. Stretches of this fortification-wall have been exposed on the southern, western and northern sides of the mound without recovering any corner-angles. On the eastern side, more evidence is still needed to establish the alignment. The

north-south distance of the fortified area measures approximately 250 m. the east-west distance remaining for the present, undefined.

During the succeeding occupation (Period II), the Harappans utilized the site for locating their citadel which was to consist of two separately-patterned parts. They used the extant tops of the earlier (Period I) fortification-wall both on the northern (for the northern part) and the western (for both the northern and the southern parts) sides for raising their citadel-fortification. On the southern (for the southern part) and the eastern (for both the northern and southern parts) sides, the Harappans did not follow the alignment of the pre-Harappans, but built their fortification-walls to restrict the enclosed area within narrower limits. It would appear, therefore, that while the northern (for the northern part) and the western (for both the northern and southern parts) sides of the citadel were defined by the outline of the pre-Harappan (Period I) fortification-wall as also the river-front, the southern (for the southern part), the bipartite division and the eastern (for both the southern and northern parts) sides were built by the Harappans to conform to the set plan, including the size of their citadel.

At the city-mound (KLB-2), evidence regarding the fortification-wall surrounding that settlement remained so far inconclusive in the trenches laid out to realize this objective.

Earlier work had established the existence of four north-south thoroughfares, of Period II. This year, one east-west thoroughfare was exposed in stretches in the southern margin of the city to show its crossings (pl. XXVIII A) with the earlier-known four north-south thoroughfares. Reckoning from the south, this would be the first east-west thoroughfare. At its crossing with the main north-south thoroughfare, remains of wooden fender-posts were found at successive levels of the street-corner (pl. XXIX A). Upwards of 70 m. further north, another east-west street was located and consequently exposed to a length of about 50 m., extending up to the eastern margin of the city. Unlike the former east-west thoroughfare, this street did not extend from one end of the city to the other but, taking off from a centrally-placed north-south thoroughfare, ran only in the eastern part and was planned in alignment with a similarly-situated east-west street running in the western part.

Deep digging in the selected area inside a house (pl. XXVIII B), brought to light plans of different structural phases within the Harappan (Period II) occupation. In one of the rooms of a house was found a tile-flooring (pl. XXIX B) showing the typically Indus design of interesecting circles.

The finds including pottery, obtained through this season's work both at the citadel-mound (KLB-1) and the city-mound (KLB-2), were typically Harappan.

UTTAR PRADESH

57. EXPLORATION IN DISTRICT AGRA.—Shri J. P. Gupta of the Northern Circle of the Survey reported the occurrence of the Painted Grey Ware and black-and-red ware at Khalaua in Tahsil Agra, and Painted Grey and N. B. P. Wares at Poiya and Vaman in Tahsil Etmadpur.

58. EXCAVATION AT KHALAUA, DISTRICT AGRA.—With a view to investigating the relationship between the Painted Grey Ware and black-and-red ware, the Northern Circle of the Survey made three exploratory soundings on a mound locally known as Gwal-Khera,

in village Khalaua, 16 km. from Agra on Agra-Jagner road. The site had been explored earlier by Shri J. P. Gupta during the course of his village-to-village survey. The present work was carried out by Shri T. S. Iyengar under the direction of Dr. Y. D. Sharma.

The mound, about 200 m. south-west of the village, lies under the extinct Son-Kheri rivulet, possibly a tributary of the Khari-Nadi. Small and compact, the mound measures 242 m. east-west and 148 m. north-south and rises to a height of 5 m. from the surrounding fields. The excavation revealed an occupational deposit 3.45 m. thick, belonging apparently to a single culture. The Painted Grey and black-and-rcd wares characterized the occupation from the very beginning of the habitation. Among the other associated wares are black-slipped and plain red wares. Unlike Atranjikhera and Noh, where an independent horizon has been claimed for the black-and-red ware, at Khalaua it was found to occur along with the Painted Grey Ware. Common shapes in the Painted Grey Ware and the black-and-red ware were the dish and bowl. Among the new motifs on the Painted Grey Ware, mention may be made of criss-cross and what appears to be a leaf filled with parallel hatching. A lonely mud-brick platform or flooring, measuring 1.5 by 1 m., represented the only evidence of the presence of structures. The yield from the operations was poor in minor antiquities which included a bone arrowhead, a copper bangle piece, beads of terracotta and carnelian, a terracotta human head and a small ivory disc.

59. EXPLORATION IN DISTRICT ALMORA.—During an exploration of the medieval temples in the District, the Department of Archaeology, Government of Uttar Pradesh surveyed the following sites.

At a distance of about 12-8 km. from Almora, on the confluence of the Swal and Supe-rivers, was located a group of temples known as Mundesvara-Mahadeva temple which contain fine specimens of medieval sculptures. Noteworthy images included Anantasayana-Vishnu in greenish stone, Siva-Parvati, Ganesa and *dvara-palas.* At Almora, a number of temples belonging to the sixteenth to nineteenth century were examined. Of these, the Nanda-Devi temple, situated in Lala Bazar and containing a four-faced *linga,* and Narasimha temple, containing an image of Anantasayana-Vishnu, were particularly noteworthy. At Shailagram, situated close to Almora, images of Chamunda, Siva-Parvati, Ganesa, Nandi, etc., were found in the Patala-Devi temple. At Bageshwar, 90.12 km. from Almora, near Berinag on the bank of river Sarayu, three temples known as Baghnath, Bhaironath and Vaneswar were examined. In the Baghnath temple, upwards of twenty-four sculptures were found, kept in the *mandapa* and the courtyard. In the cella of the temple was seen a very fine image of Parvati along with a *linga.* These figures were made of black basalt and belonged to the medieval period. In the temple of Bhaironath also a few sculptures were seen, but they were comparatively crude and were also badly mutilated. At Someshwar, 33.7 km. from Almora, a few sculptures of Siva-Parvati, Durga, Rama, Vishnu, etc., were seen in the cella of the temple. They were made of black basalt and were of the medieval period.

60. EXPLORATION IN DISTRICT BULANDSHAHR.—Shri R. P. Sharma of the North western Circle of the Survey, in the course of his exploration, discovered Painted Grey Ware sites at Bhogpur and Salempur in Tahsil Khurja. He also noticed N. B. P. Ware site at Amanullahpur *alias* Maharana and early historical sites yielding coarse-grey, black-slipped and plain red wares of the Sunga-Kushan types at Bargaon, Budhena, Jafarpur *alias* Gurdipur, Ismailpur and Sonda-Jatpur in the same Tahsil.

61. EXPLORATION IN DISTRICTS DEHRA DUN, GARHWAL AND SAHARANPUR.—Shri M. N. Dcshpande, assisted by Sarvashri S. P.Jain and H. K. Narain of the Survey, undertook further exploration along the bank of Budhi-Ganga and the adjoining areas, as a part of the training-programme of the students of the School of Archaeology. During the exploration, a 40 x 16 km. area, falling within the valleys of the Ganga and its tributaries, Rani-Rao, Pathari-Rao and Ghoina-Rao in Tahsils Rishikesh and Roorkee, respectively of Districts Dehra Dun and Saharanpur, were surveyed. A number of important sites of various cultural and chronological horizons were located, noteworthy amongst them being Nasir-pur, from where copper tools, now displayed at Gurukul Kangri University Museum, are reported to have been found. The site yielded sherds of the Ochre-coloured Ware, of which about 1-30-m. thick occupational strata were observed. At Mayapur in Hardwar, a similar deposit of Ochre-coloured Ware was noticed. The ancient site at Puranpur yielded Ochre-coloured Ware, Painted Grey Ware, plain grey ware, and medieval Glazed Ware.

Among standing monuments, a shrine of Imam Ali Sabir, locally known as Sabir Piya, containing an inscription, dated 440 A.H. (A.D. 1062), was noticed at Piran-Kaliyar, a place situated on the Roorki-Hardwar road.

An early historical site situated in the hilly terrain, about £ km. from Chandi-Ghat on either side of the road leading to Kot-Dwar, yielded remains of brick walls and fortifications, completely covered by thick jungle-growth. At places, exposed brick walls were found to be about 4|m. high. Red ware sherds of Sunga-Kushan affiliation were associated with these remains.

The explored sites are listed in the Table below. (The following abbreviations have been used: *H= thick red ware, possibly Harappan; OC= Ochre-coloured Ware;PG=Painted Grey Ware; G=grey ware associated with* JV. *B. P. Ware; BS= black-slipped ware; BR= black-and-red ware; R—red ware of the Sunga-Kushan assemblage; M=medieval ware.)*

District	*Site*	*Locality*	*Ware(s)*
Dehra Dun	Maya-Kund	—	*R*, M
,,	Virbhadra	—	R
Garhwal	Tamkhani	—	R
Saharanpur	Ahmadpur Grant	—	M
	Ajmeripur	—	R,M
,,	Aneki I	—	R,M
,,	Aneki II	—	M
,,	Aneki III	—	R, M
,,	Aneki IV	—	R, M
,,	Aneki V	—	OC, R
,,	Aneki VI	—	M
,,	Asaf-Nagar-Danda	—	M
,,	Asaf-Nagar-Dandi	—	M
,,	Atmalpur	Atmalpur-Bongla	M
,,	Aurangabad	—	G, M
,,	Bharapur-Bhauri I	—	M

District	*Site*	*Locality*	*Ware(s)*
Saharanpur	Bharapur-Bhauri-II	—	M
93	Budhi-Mata	—	M
95	Garh	Qutubpur	OC, M
93	Hetampur	—	OC, R, M
5?	Jagjitpur	—	M
55	Khera-Amirpur-Sikandar	—	M
53	Khera-Ibrahimpur	—	M
95	Mayapur	—	OC, R, M
55	Marghubpur-Didaheri	—	M
55	Mughrubpur	—	M
55	Nasirpur	—	OC, M
33	Piran-Kaliar	—	M
33	Puranpur	—	OC, PG, G, M
33	Qasimpur-Jund	Kankhal	M
95	Ranipur	—	M
55	Ransura	—	M
53	Raoli Hazara	—	M
33	Rohelki-ka Khera	—	M
55	Salempur Mahdud	—	OC, R, M
59	Salempur	—	M
33	Samthar Shah	—	M
55	Sati Kund	Kankhal	OC, R
	Teliwala	----	OC, G

62. EXCAVATION AT ATRANJIKHERA, DISTRICT ETAH.—In continuation of the previous year's work *(1963-64,* p.45) the Department of History, Aligarh Muslim University, resumed excavation at Atranjikhera for the fourth season. The work was directed by Shri R. C. Gaur under the general supervision of Professor S. Nurul Hasan. The objectives of this season's dig were to determine (i) the extent of the Ochre-colour Ware and the black-and-red ware and (ii) the exact relationship between the deposits of the Painted Grey and N.B.P. Wares. The cultural sequence, however, remained the same as reported earlier.

Period I.—It has now been carefully observed that the entire deposit of the Ochre-coloured Ware, representing the earliest occupation at the site, was confined to a depression caused in the natural soil in a limited area in the north-eastern part of the mound (ARJ-4). From the evidence of the rolled edges of the potsherds, it is reasonable to argue that this pottery was probably carried by flood-waters from a place of regular habitational deposit

and remained water-logged for a considerable time in this, depression. This could perhaps explain the fact why no regular habitational deposit of this industry could be found in spite of several seasons of digging. ;

Even in a limited area of excavation, a large quantity of pottery was found. The common types included: vase with flanged rim; medium-sized pot with varying rims and necks; basin, including that with channel-like spouts below the rim; bowl; and the piece of a stem, probably part of dish-on-stand (fig. 5, 1-5). Besides, decorated sherds, bearing incised designs, ware also met with. Among the last-mentioned variety, one was found to have a tan-slipped surface, probably having painted bands in black pigment.

Period II.—Further digging fully confirmed the previous observation that the strata containing black-and-rcd ware industry represented a distinct cultural period. The deposits of this Period fell between those yielding the Ochre-coloured Ware and the Painted Grey Ware, excepting on the southern side of ARJ-4, where it was found to lie just above the natural soil. Another noteworthy feature was the presence of the earth-filling between the deposits of the black-and-rcd ware and of the Painted Grey Ware. Since the filling belonged to the Painted Grey Ware phase, it appears that the black-and-red ware occupation had been brought to a close by a flood which washed away a considerable portion of the strata leaving only a thin deposit of this culture. In addition to this filling, at certain places, a layer of filling containing sherds of the Ochre-coloured Ware mixed with black-and-red ware, was also seen just below the deposit of black-and-red ware. Obviously, this filling had been done by the people using the black-and-red ware to raise or level up the ground so that they could commence their settlement.

The ceramic content of the Period comprised black-and-red, black-slipped, red-slipped and unslipped wares (fig. 5, 6-13). Most of the shapes conformed to the types reported last year. In the black-and-red ware, bowls, both of large and medium size, were found. In the coarse black-and-rcd ware group, special mention may be made of a fragment of a vase having slightly oblong body and out-turned featureless rim with gritty surface in the lower part and nail-pressed decoration on the constricted neck. The shapes in the black-slipped ware were almost the same as those in the black-and-red ware. In the red ware, no large pot or storage-jars were found. The shapes of this industry included bowls and miniature pots. Generally, the pots were of wide mouth. The black-and-red pottery of this site shows affinities, in fabric, with the comparable pottery from Gilund and Ahar.

Although no definitive blade-tools have so far been recognized, waste stone chips and flakes were again met with. Among other objects, a few pieces of burnt clay deserve some added attention. On the basis of shape and size, the probability of their being bricks cannot be ruled out, while two of these, of uniform size (14.5 x 9.5 x 3.5 cm.) may have been re-used either as net-sinkers or hanging-weights.

Period III.—The deposits of the Period yielded Painted Grey Ware. Since digging was confined to a limited area, sufficient habitational details were not recovered. As in previous years, however, distinct floor-levels were again observed. These floors, made of yellowish rammed earth, occasionally with baked mud-clots, also showed post-holes. Plaster pieces with red marks, indicative of wattle-and-daub method of constructing houses, were also observed.

The ceramic content of the Period (fig. 5, 14-22) was almost' the same as reported earlier. Common shapes and designs of the Painted Grey Ware included, besides the usual dish and bowl, some interesting miniature pots. Of special interest were two sherds bearing cloth-impressions (pl. XXX A). Among the plain grey ware, a typical miniature bowl with

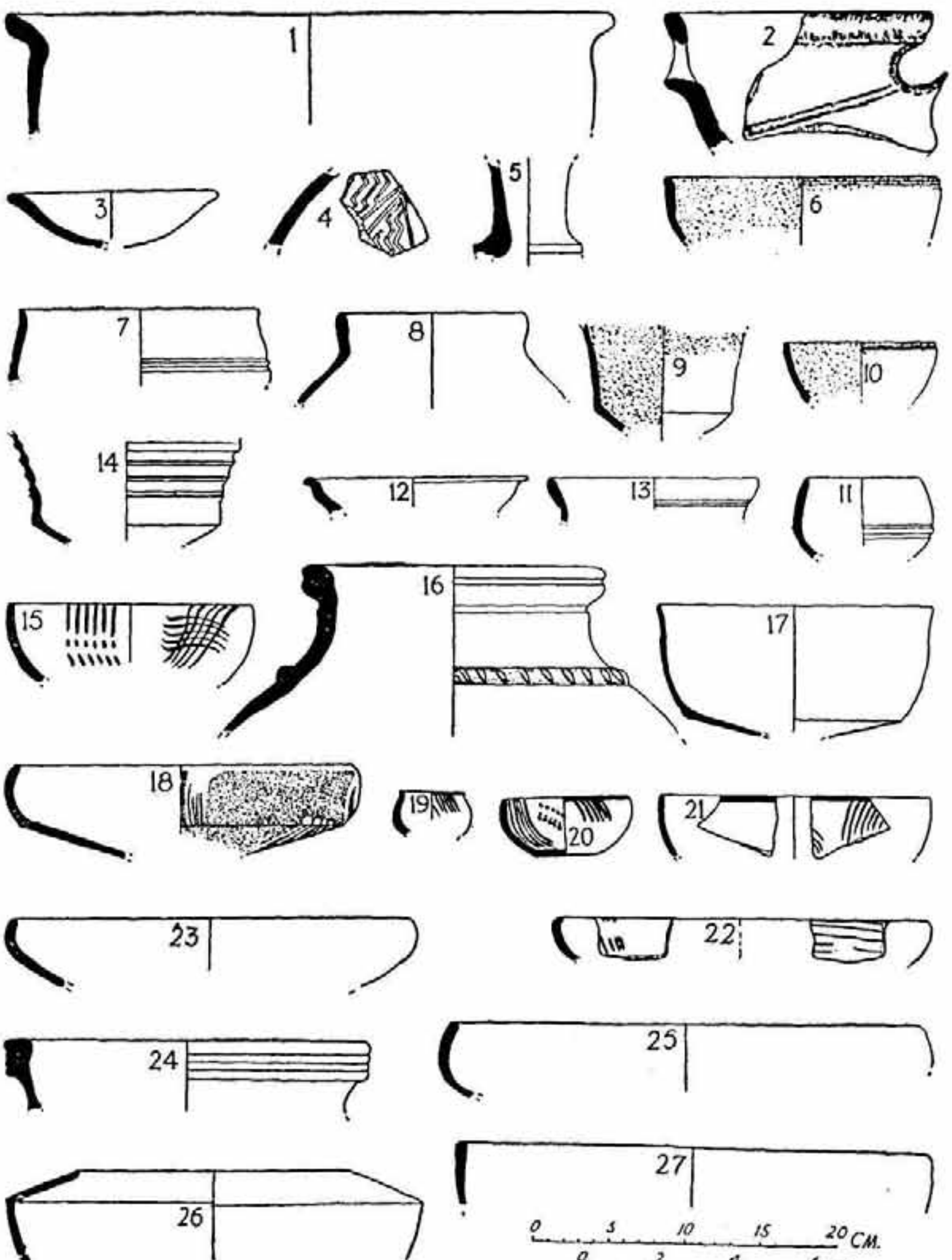

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Fig. 5

a concave body and another bowl with weakly corrugated concave sides merit special attention. In the red ware also, a few shapes of basins and vases are of particular interest.

In spite of limited digging, iron objects (pl. XXX C) were found in a sufficient number. Other associated objects comprise: a comb, beautifully decorated with engraved circlets (pl. XXX B); a complete domestic pestle in red sandstone; and terracotta objects, like discs (pl. XXXII A), bangles, two pieces of hand-made human figurines, some pieces of toys and terracotta bead necklace (pl. XXXI C).

The late phase of the Painted Grey Ware witnessed also the earliest occurrence of the N. B. P. Ware, the entire cultural pattern, however, remaining the same. In this phase, however, shapes which arc characteristically associated with the N. B. P. Ware, viz., carinated *handis,* pear-shaped vases, etc., are conspicuously absent. Noteworthy objects include bone arrowheads (pl. XXXI A) including one with an iron shaft (pl. XXXI B).

Period IV.—This Period represents the overlap of the Painted Grey and the N. B. P. Wares. The deposits of the Period can broadly be divided into two phases. In the earlier phase, though no definite house-plans could be traced, pieces of burnt mud-clots with bamboo and reed-marks were found. In the latter phase, remains of mud-walls with plaster and other structures of mud and baked bricks were commonly met with. The size of the bricks used was 42 x 26 x 7 cm. Most of the mud-brick structures were found to be plastered and, on a few, successive coating of plaster could also be observed. Besides floors and domestic hearths (pl. XXXIII A), a peculiar type of hearth showing one mouth and three openings was also exposed.

The ceramic content (fig. 5, 23-27) of the Period was almost similar to that of Period III at Hastinapura. Among other finds, mention may be made of a tiny bird of bone, a mosaic piece (pl. XXXII B), a terracotta block for printing designs (pl. XXXIII B), a copper miniature vase and an iron hoe. The last two objects belonged to the later phase of the N. B. P. Ware and the remaining to the earlier.

63. EXPLORATION IN DISTRICTS FARRUKHABAD, HARDOI, KANPUR AND SHAHJAHANPUR.—Dr. V. N. Misra of the Deccan College Post-graduate and Research Institute, Poona, explored several sites of prehistoric and early historical periods in the above-mentioned Districts.

At Farrukhabad, on the western fringe of the town, is a large and high mound on which are located the town-hall building, the water-reservoir and a few other structures. The mound, locally known as Bhishmapur and associated with Draupadi, is about 20 m. high, of which the upper 8 m. or so represent human occupation, and the lower part, deposit of river-silt. Its western and southern sides have been badly eroded by the Ganga and now stand as vertical cliffs, virtually impossible to climb, except where cut up by rain-gullies. Exploration of the sides brought to light a large quantity of Painted Grey and N. B. P. Wares, ceramics of the early historical period and medieval Glazed Ware. The shapes represented in the Painted Grey Ware included the dish, basin, bowl and a *lota*-shaped vessel. Associated with this Ware were a thin red ware, polished black ware and a small quantity of black-and-red ware. In the red ware a complete dish with incruved sides and sagger-base was found. Another dish with straight sides bore a painted design consisting of vertical strokes in white pigment over a red surface. The shapes represented in polished black ware consisted of the bowl and dish, similar to those of the Painted Grey Ware. Among other antiquities, mention may be made of several terracotta discs in grey fabric, bearing incised decoration near the edges, and a broken terracotta figurine, possibly human. Similar discs have been found at Hastinapura from comparable levels.

Another site explored in this District was Kampil (ancient Kampilya), 39 km. west of Farrukhabad. On the north-western side of the town is a large mound, locally known as Draupadigarh, covering an area of several km. square and 5 to 6 m. high. Its southern and eastern sides are covered by the present town, and the western side has suffered considerable erosion by the Ganga. Almost the entire mound is under cultivation, as a result of which it is uniformly flat. As such, only the upper surface seems to be disturbed. A large quantity of the Painted Grey Ware and other associated fabrics were collected from this site. The N. B. P. Ware and medieval Glazed Ware were also found in small quantities. Among other finds an incised terracotta disc is worth mentioning.

In District Hardoi, two sites, viz., Lakhmapur and Shahabad, the latter a town 30 km. south-east of Shahjahanpur, were explored; Copper Hoard objects from Shahabad have been reported by Dr. Jagadish Gupta of the University of Allahabad. In the south-eastern side of the town is a series of connected mounds covering an extensive area. From the side of the mound, through which cuts the *kachcha* road to Pali, were collected many sherds of the Painted Grey and N. B. P. Wares, the latter including a large fragment of a thick dish in inferior fabric. The mounds are sparsely inhabited and cultivated. A few Gupta terracotta figurines and a copper coin, probably of some medieval dynasty, were also obtained from the site.

Lakhmapur is a village some 20 km. south of Shahabad on the bank of the river Garrah which joins the Ganga near Kannauj. The site consists of a huge mound, 10 to 12 m. high, covering an area of several acres. The mound is undisturbed except for minor brick-robbings, and, for its size and prominence, is well-known in several adjoining Districts. The cuttings made for brick-removal have exposed walls of unusually large and thick bricks. The site yielded a few sherds of the Painted Grey and N. B. P. Wares, a sprinkler fragment of Red Polished Ware and four Muslim copper coins.

In District Kanpur, the site of Bithur, some 20 km. north-west of Kanpur, was further explored. The site has long been known for its rich yield of Copper Hoard objects. A small mound on the eastern edge of the town, known as Valmiki-Ashram yielded a large number of N. B. P. Ware sherds.

Three Copper Hoard sites, viz., Dhaka, Indilapur, and Sarthauli, in District Shahjahanpur were explored. At Sarthauli, two mounds, about | and 1 km. respectively away from the findspot of the 1921 Copper Hoard were examined. Both of them seem to belong to a period later than the date of the Copper Hoard.

At Dhaka, situated on the right bank of the Madnapur Minor branch of the Sharda Canal, some 10 km. south-west of Tilhar, fine flat copper celts had been found in 1917. Enquiry of the village elders led by Shri Jagannath Yadav revealed that the celts had been found in the course of ploughing the fields about 200 m. south-west of the village. On examination, the actual spot was found to be a plain ground with no remains of ancient habitation.

Incidentally, it might be added for the guidance of future investigators of the site that there is another village of the same name near the railway-station, Banthara, on the Shahjahanpur-Bareilly line. This Dhaka has nothing to do with the copper celts.

Indilapur, situated about 1 km. north of the village of Mundia and some 11 km. north of Shahjahanpur, had yielded a copper celt in 1944. On enquiry in village Mundia, it was learnt from the postman Munshi Lai, who, in association with another person, went to deposit the celt in the Lucknow Provincial Museum, that the axe had been found during the ploughing of a field near the mound. The mound itself is of very recent origin and could have had no relation to the celt.

At Jaunra, 3 km. south-west of Dhaka, sherds of Painted Grey Ware, mostly plain but undoubtedly of Painted Grey Ware fabric and shapes, were collected. No other pottery was found.

Besides, a historical site known as Matin-Mahadev was also explored in this District. The site, consisting of a large, narrow mound, about 1 km. long and 3 to 4 km. high, lies north of the railway-station of Sheramau, on the Lucknow-Bareilly branch of the North-eastern Railway. The mound is now fully under cultivation and is much damaged. Many Muslim copper coins and a Kushan one, beads of carnelian, agate, crystal, paste and glass and several terracotta figurines were obtained from this site. No distinctive pottery was, however, found.

64. EXPLORATION IN DISTRICTS GHAZIPUR, JAUNPUR AND VARANASI.—In the course of an exploration in the Districts, the Excavation Department of the Sanskrit University, Varanasi, under the direction of Shri R. B. Narain, assisted by Shri Asutosh Upadhayaya, Shri Raja Ram Pal and Shri Prabodh Narain Awasthi, explored the area falling within a radius of 80 km. around Masaon and discovered the following seven sites.

At Bhimapar, located on the northern bank of the river Gangi in Tashil Saidpur, District Ghazipur, sherds of black-slipped, grey (medium fabric) and the associated red wares were found. On the western side of the Bhimapar market, there is a stone-built temple showing fine carvings both on the interior and the exterior. The temple, assignable to the Rajput period, contains an image of Vishnu accompanied by Lakshmi and Garuda.

At Kotsan, located on the northern bank of the river Akaunjhi in Tashil Saidpur, District Ghazipur, sherds of fine grey, black-slipped and the associated red wares were collected.

At Uchauri, located nearly 4.82 km. south of Bhimapar market, District Ghazipur, a deep ditch, which may possibly represent the moat for a defensive system, was noticed. From the surface, sherds of black-slipped and red wares were also collected.

At Vikrampur, situated in Tahsil Saidpur, District Ghazipur, sherds of black-slipped and the associated red wares were collected. Three ring-wells were noticed in the sections.

At Gaddi-ka-Than, situated nearly 3 km. away from Kerakat Bazar on the river Gomati, District Jaunpur, sherds of the N. B. P. Ware, black-slipped ware and the associated red wares were collected.

At the mounds near Garha-Gopalapur (Alsia Bazar and Taunia), District Jaunpur, sherds of the N.B.P. Ware and black-slipped and red wares were collected.

At Karaunt, located 7 km. west of the Varanasi Cantt. station, sherds of black-and-red, black-slipped and red wares were collected from disturbed section and rain-gullies.

65. EXCAVATION AT MASAON, DISTRICT GHAZIPUR.—The Sanskrit University, Varanasi, under the direction of Shri R. B. Narain, assisted by Shri Ashutosh Upadhyaya, Shri R. R. Pal and Shri P. N. Awasthi, resumed (*1964-65,* p. 42) excavation at Masaon. The objectives of this season's work were (i) to confirm the sequence revealed last year, and (ii) to ascertain the existence or otherwise of any fortification around the ancient settlement.

Four trenches, labelled A2, A3, A4 and A5, each 10 m. square, laid out in the alignment of the last year's cuttings on the southern side, were taken up for excavation this year. Of these, trench A2 was taken up for obtaining the full sequence of the site, while trenches A3, A4 and A5 were intended for tracing the existence of the fortifications.

This year's excavation confirmed the sequence of the last year, notably relating to the

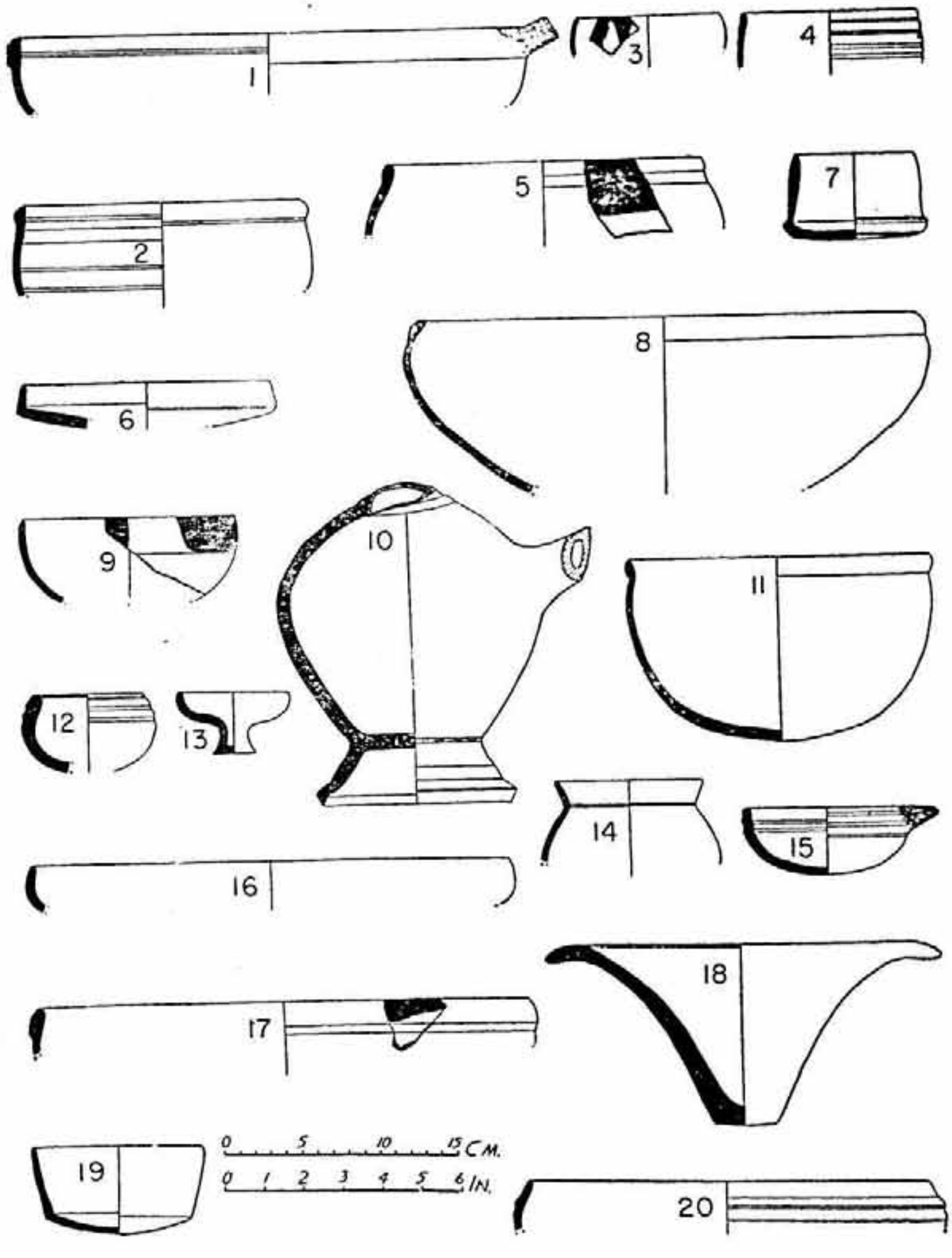


FIG. 6

existence of the site of a 1.50-m. thick deposit earlier than the N. B. P. Ware. The other trenches, A3, A4 and A5, failed to yield any evidence of a fortification around the settlement. On the other hand, thick fillings of ash and spoil earth were noticed in these trenches, pointing to an evidence perhaps to strengthen the marginal boundary of the city.

On the basis of the present season's work, the range of the cultural sequence at Masaon can reasonably be fixed from the pre-N.B.P. Ware horizon to the Gupta period.

Period I consists of two Sub-periods, viz., IA and IB. Of these, Sub-period IA, having a deposit of 1.50 m., represented the pre-N.B.P. Ware levels. The ceramics of this Sub-period consisted of black-slipped, fine grey, slipped grey, having black horizontal lines in the middle or below the rim portion, occasionally in different shades, black-and-red and plain red wares (fig. 6). Associated finds included: bone points; terracotta discs, bearing incised animal figures; beads; fragmentary iron objects; stone balls; round ivory object bearing decorations in incised circles; stone sharpeners and bangle pieces. No structural activity was noticed during this phase.

Sub-period I B was marked cheifly by the occurrence of the N.B.P. Ware (fig. 6), punch-marked coins and typical early terracotta figurines, often bearing punched, incised and pin-hole decorations. Noteworthy among the last-mentioned objects are: (i) an elephant, decorated with a row of impressed *chakra* over the back and a row of leaves over the trunk with eyes formed by pierced holes within lozenges; (ii) animal having a punched symbol of trident over the back; and (iii) animal with the pin-hole decoration all over the body. A piece of a moulded terracotta figurine of a female having a child in her lap also merits attention. Other important finds from this Sub-period included; a copper mirror; copper antimony-rod; bone points (tanged and simple) with their working-ends fashioned sometimes in a screw-driver shape; microlithic core; terracotta discs, bearing incised marks of trident, *svastika,* round circles, radiating lines from one central point; a small dabber-shaped terracotta object; terracotta toy-wheel; hone or pestle of unbaked clay with stone chips (pl. XXXIV B) fixed on the working side in a mosaic form; fragments of polished stone pieces; and iron objects in the shape of an arrow and spear-point. A large quantity of bones found from this Sub-period indicate the dietary habits of the people. The associated ceramics comprised black-and-red and slipped grey wares. The structural activity of this Sub-period was represented by three circular post-holes, two ring-wells and two different floor-levels. One of the floor-levels was found to be made of hard rammed clay with a soling of potsherds.

Period II was characterized by typical Sunga terracotta human figurines. The N.B.P. Ware continued to exist in dull and degraded forms along with the black-slipped, coarse grey and red wares (fig. 6). Among important finds may be mentioned: copper punch-marked coins; a cone-shaped pendant with perforations; copper bangles; a terracotta animal figurine, possibly a goat; and a toy-cart wheel. The structural activity of this period was represented by two different thick floors of rammed clay with a soling of brick-bats and two ring-wells.

Period III was marked by the absence of the N.B.P. and black-slipped wares, the main ceramic industry of the Period being a red ware represented in such shapes as the carinated *handi,* bowl, big vase, lid-*cum*-bowl, knobbed lid, big storage-jar etc. Important finds of the Period comprise: Kushan copper coins; inscribed seals and sealings; terracotta plaques showing a couple in an amorous pose; two female terracotta figurines, heavily decorated and ornamented; a female figurine with the face painted in black; a female figurine, bearing decorations over the forehead (pl. XXXIV C), with applied eyes; a female

figurine with coiled hair and with eyes and ear decorations shown by punched circles; a smiling female figure (pl. XXXIV D) with ear-ornaments and four holes over the back portion of the head; portion of a terracotta votive tank; terracotta amulet; skin-rubbers; beautiful game objects; a potter's dabber; shell bangles and an iron spear-point.

With a view to knowing the nature of the brick pavement exposed last year, further digging in the south was undertaken. The pavement was found running down the slope of the mound like a common passage (pl.. XXXIV A) leading to the habitation-area. Portions of the brick structures found last year were further exposed. A partial plan of a house containing four rooms along with a brick flooring on the eastern side was recovered. Apart from this, a mud-floor with a hearth full of ash was also exposed in the succeeding phase.

Period IV, being the last phase of occupation over the site, yielded a large number of interesting finds including: seals and sealings; copper coins; human, animal and bird terracotta figurines; terracotta sprinklers; skin-rubbers; stone pestles; terracotta square discs; dabbers and spouted pots. Among inscribed seals and sealings, those showing a seated lion and seated *nandi* are of special interest. Red ware, sometimes with incised decoration, was the dominant ceramic industry of this Period. Two structural phases were exposed. The exposed structures, however, did not present any plan, as they were badly damaged and robbed.

66. EXCAVATION AT BUROGAON, DISTRICT JHANSI.—From a small unpretentious mound of bricks and brick-bats, on the bank of the rivulet Utari, within the jurisdiction of village Burogaon, also known as Chiglaua, some cowherds had excavated three beautiful stone images of Vishnu, Ganesa (pl. XXXV A) and Karttikeya, a *linga* with *yoni-patta* and pieces of two door-jambs (pl. XXXV B and C), lintels and sills. The discovery was brought to the notice of the Northern Circle of the Survey by the District Magistrate of Jhansi. The mound had obviously been formed owing to the collapse of a temple-complex, and it was, therefore, decided to clear the brick-heap systematically, with a view to studying the details of the complex. The work was carried out by Shri S. B. Singh under the direction of Dr. Y. D. Sharma.

The mound is 25 m. in diameter and lies hardly at a distance of 30 m. from the rivulet at a place locally known as Marhia-Ghat. The villagers had already disturbed it in search of the images, and most of the structural details had vanished. It appeared, however, that facing the rivulet on the east, a base for walls of two adjoining temples was first prepared with rubble, over which the plinth was laid in courses of bricks on a circular plan, with a projection for the entrance. From the plinth (pl. XXXVI A), rose the temple-walls on a cross-shaped plan, uniquely characterized by diagonal and angular projections in corners with a vestibule or *ardha-mandapa* in front, and with an intervening space between the two temples. The diameter of the circular foundations measured 3.9 m., the *garbhagriha* was about 1.5 m. square, while the vestibule measured 1.4 x 1 m. A platform, 14 m. square and 0.85 m. high, with steps from the ground level, was later raised around the temples, covering the foundations and the plinth. The construction of the temples on a circular base and with angular and diagonal projections is unique.

The temples were brick-built, using ornamental bricks in appropriate places, but the doors were of carved stone. The bricks were in two sizes, measuring 35 x 95 x 6 cm and 45 x 30 x 6 cm They were laid in the English bond with mud-mortar. From the lintels of the doors, one bearing the figure of Ganesa and the other of Garuda, and from the discovery of *linga* and image of Vishnu, it was evident that one of the temples was dedicated

to Siva and the other to Vishnu. They may be dated to *circa* tenth century A.D. on the basis of the style of the icons.

Iron arrow-heads, chisels and nails were also discovered from the debris of the structures. The pottery consisted of plain red ware, with no specialized types.

67. EXPLORATION IN DISTRICT KANPUR.—Shri L. M. Wahal of the Northern Circle of the Survey, in continuation of his earlier work, reported the N. B. P. Ware from Attawa, Jhangirabad and Lalpur in Tahsil Ghatampur, while at Jhangirabad, the Painted Grey Ware and black-and-red wares were also noticed by him. The remains of a medieval brick temple were seen in the village of Amour in the same Tahsil. Stone sculp tures of Uma-Mahesvara, Ganesha, Surya, Vishnu and *gaja-vyala* were found in Murhala and Sisupur villages.

68. EXPLORATION IN DISTRICT LUCKNOW.—Continuing his earlier survey, Shri S. B. Singh of the Northern Circle of the Survey, discovered sites yielding the N. B. P. Ware near the villages of Bina, Hulaskhera and Mandoni in Malihabad Tahsil. In the villages of Amaniganj, Aramba, Bhadsara, Digvi, Ghalwani, Kumhrawana, Majhgawan, Misripur, Rukhara and Sonwan, he noticed some Brahmanical sculptures of the medieval period. A fragmentary image of Durga at Unai appeared to be of early medieval period.

69. EXPLORATION IN DISTRICT NAINI TAL.—In the course of exploration in the District, the Department of Archaeology, Government of Uttar Pradesh, surveyed Mahadeva and Deviji temples, situated on the bank of Noukuchiya Tal, about 4 km. from Bhim Tal. In the former temple, a beautiful image of Ganesha, in black basalt, belonging to about the twelfth century A.D. was found. In the latter temple, a big-size image of Rama and the consort of Vishnu, was found in the cella along with the images of Ganesha and Vishnu. The image of Rama is made of black basalt and belongs to *circa* thirteenth century A.D. In a temple, situated on the bank of Damayanti Tal, 4.8 km. from Bhim Tal, an image of Surya in black basalt, ascribable to the medieval period, was noticed.

70. EXCAVATION AT KASHIPUR, DISTRICT NAINI TAL.—The Northern Circle of the Survey, under the direction of Dr. Y. D. Sharma, conducted a limited excavation on the mound near Kashipur, identified by General Cunningham with Kiu-pi-shwang-na of the Chinese pilgrim Hiuen Tsang, which is rendered by Julien as Govisana. The mound is polygonal, with a longer east-west axis, making it look roughly like a rectangle. The middle portion of its northern side is characterized by a hump, known as Bhima-gaja or Bhima-gada. Cunningham states that he succeeded in tracing here the walls of what appeared to have been a large room 21.94 m. in length from north to south, by 19.20 m. in width, the walls being 1.82 m. thick. About 1939-40, with the co-operation of Shri Rameshwar Dayal, then Sub-Divisional Magistrate at Kashipur, Shri Krishna Deva of the Survey had excavated this site. It appears from the photographs available that the excavation revealed some brick walls and produced some quantity of terracotta figurines and potsherds. Later, in 1960, an inscribed stone image of Trivikrama was reported from the site of Bhima-gaja by Shri K. P. Nautiyal and is now in the National Museum, New Delhi. He also collected potsherds of the N.B.P. Ware from here (*1960-61*, p. 67) and found some gold coins of the Kushan period with a local resident, which were said to have been picked up from the mound by a villager.

The present excavation had a limited objective in view, viz., to expose and ascertain the nature of the building hidden under the Bhima-gaja hump. The operations revealed the southern wall (pl. XXXVI B and XXXVII) of a structure, most likely a temple. Built of burnt bricks, it measures 29.5 m. long and 5.95 m. high from the foundation. It is remarkable for its bold and graceful mouldings, exquisite and perfect joints, highly smoothened surface of brickwork and a judicious and effective employment of seven *chaitya* -windows (pl. XXXVI B) across it. Three of these windows arc free and the remaining four set within pilasters as a simple but effective decorative element. The different sizes of bricks employed in the structures measure 11 x 10 x 7 cm., 22 x 17 x 7 cm. and 60 x 40 x 12 cm.

Part of the northern wall of the structure was also exposed. The exact shape of the structure is not known yet. The exposed walls, obviously belonging to the high plinth of a temple, may be assigned, on stylistic grounds, to a period between sixth to eighth centuries A.D. The superstructure of the temple must have occupied the centre of the plinth, but all this disappeared either earlier or during the operations of 1939-40.

Another wall, running roughly parallel on the south of the above-mentioned structure was in all probability raised at a later date, as judged from its inferior brick-work. What purpose it served, it is too early to say.

The temple may have gone into disuse and collapsed after the twelfth or thirteenth centuries, stone images of which period, including the Trivikrama figure, arc available at or near the site. The thick debris that accumulated against the walls contained antiquities from the very beginning of the habitation. Among these were copper coins, copper and glass bangles, copper rings and ear-rings, terracotta and stone beads, terracotta human figurines and an iron knife, nails and chisels. The mass of pottery recovered is roughly comparable to Ahichchhatra Stratum III, assigned to A.D. 350-750. But there is a considerable quantity of potsherds of earlier dates, including the Painted Grey Ware, which is the earliest industry so far noticed here.

No attempt was made during the limited operations to study the cultural sequence of the site. A few other walls on the north of the Bhima-gaja, on the slopes of the mound, were exposed, but their purpose was not established.

71. EXPLORATION IN DISTRICT SAHARANPUR.—Shri V. K. Tewari of the North-western Circle of the Survey, in course of his exploration, discovered: (i) Harappan sites at Kalbeti, Newabas, Salarpura and Tatarpur-Kalan in Tahsil Nakur; (ii) Ochre-coloured Ware sites at Aghiana, Sarurpur Taga, Shukartal and Tauli in the same Tahsil; (iii) Painted Grey Ware sites at Alampur, Bilaspur, Hulas, Isapur, Latifpur, Maheshpur, Miragpur, Rankhandi, Sadhauli, Shakarpur Road and Thamnamajra in Tahsil Deoband and at Kaulakhedi and Pupa in Tahsil Nakur; and (iv) grey ware sites of the early historical period at Saragthal m Tahsil Deoband and Bishanpur in Tahsil Nakur.

72. EXCAVATION AT RAJGHAT, DISTRICT VARANASI.—The Department of Ancient Indian History, Culture and Archaeology of the Banaras Hindu University, continued (*1964-65*, p. 44) excavation at Rajghat. The objectives of this season's work was to ascertain the nature of the inner slope of the mud-rampart, discovered earlier (*1962-63* p.41) and to relate it with the occupational deposit within the enclosed area. With this end in view, a trench measuring 23 x 56 m. was laid out. It may be stated at the outset that both these objectives remained unfulfilled for no trace of the rampart could be observed in the excavated trench. It is likely, therefore, that the innermost limit of the rampart may be

outside the trenched area. The difficult and steep fall of the mound in the area and the occurrence of a massive brick structure at the southern edge made it difficult to extend the trench during the current season.

The excavation was, however, rewarding in other ways. The two noteworthy features of this year's excavation consisted of (i) a 3.35 m. thick deposit preceding the earliest occurrence of the N.B.P. Ware in this area, and (ii) a large-sized circular platform, made of baked bricks and ascribable to *circa* third century A.D.

Excavation revealed that the N.B.P. Ware was completely absent from the lower 4-m. deposit. The red ware assemblage of the deposit was also quite distinct from that associated with the N.B.P. Ware. Some new types in the former ware were noticed, which may compare with those from the comparable strata at Chirand and other sites in west Bihar. Special mention may be made of a pointed base of a globular jar, reminiscent of the typical Harappan goblet. The similarity, however, may not be underlined. Another feature deserving notice is the absence of dish-form in the lower levels of this deposit. Black-slipped ware was found to occur throughout this period. There was no evidence for the use of iron which significantly starts with the earliest appearance of the N.B.P. Ware.

In Period II and III, structural activity (pl. XXXVIII and XXXIX B) was at its maximum. Considerable use seems to have been made of wooden or bamboo rafters and posts, the latter, generally for supporting the roofs as evidenced by the presence of post-holes in almost every single structure excavated this year. An interesting discovery in the strata of Period II was that of an angle of a mud-brick structure, standing to a height of four courses (brick size: 39 x 30 x 7 cm.). For roofing-purposes, terracotta tiles, often perforated and grooved for affording firm and easy joints, seem to have been extensively used. The most interesting structure exposed during this season was a circular solid brick platform (pl. XXXIX A), built in a stepped fashion. Only about the third of the structure was exposed, making it possible nevertheless to work out its size. The diameter of the topmost tier was 2.20 m. while that of the largest at the bottom measured 3.90 m. A noteworthy feature of this structure was the use of uprights in the second step (from the bottom) where two post-holes in a line were also observed. Although it is not possible to know the precise nature and function of this structure, its imposing size does suggest its use as *stupa*. On the basis of the associated terracotta sealings, the structure can be ascribed to the early phase of Period IV.

The story of this year's dig, both in regard to finds and sequence, is nearly the same as has been reported in the previous years. Among the objects deserving particular notice, mention may be made of a terracotta seated human figurine of a deity showing elaborate arrangement for *abhisheka* water to flow from the head and come out in driplets from the navel portion of the body and a unique red ware handled-bowl recovered from the inside of a room and lying in close proximity of a stone pestle and mortar. Both these objects belong to the late phase of Period IV.

WEST BENGAL

73. EXPLORATION AT SUSUNIA, DISTRICT BANKURA.—The Department of Archaeology, Government of West Bengal, under Shri P. C. Das Gupta, assisted by Shri D. K. Chakravarty and Dr. S. C. Mukherjee, undertook an exploration in the region of Susunia hill covering the valley of the Gandhesvari river including other nullahs in the region and brought to light one of the largest factory-site of the Early Stone Age in eastern India. Besides, fauna-assemblage of the Upper Pleistocene and earlier times was also obtained.

About thirty-five sites yielding Early Stone Age tools were discovered around the Susunia hill amidst gravels and cliffs of the streams like the Bankajor, Dhankora and Gandhesvari (pl. XL A) besides other nullahs or streamlets.

While the number of Early Stone Age tools (pl. XLI A) recovered from the region exceeded two thousand, the types represented in the collection mainly included highly-evolved pear-shaped or lanceolate Acheulian hand-axes, ovates, cordates and cleavers, often revealing beautiful forms achieved by alternate or step-flaking, with delicate 'S'-twist on the edge. While these tools, on the basis of rolling and patination, fall into two classes, one being earlier than the other, the typology displays a common tradition. The first users of handaxes, ovates and cleavers lived on the surface of the sandstone foundation, found flaggy and disjointed at places. A series of scraping of cliff-sections at the Bankajor, Dhankora and Gandhesvari revealed the intrusion of gravels even within the core of decomposed and softer levels of sandstone (pl. XL B).

This period seems to have been followed by a more wet phase when gravels were deposited in the foot of the hills as also on the cliffs and beds of streams and nullahs. In this connexion, it may be observed that most of the implements were found in the gravels of streams and nullahs or in slope-deposits in their vicinity and were rarely discovered on the hill itself except on the scree occurring around the spring now associated with the ruins of a medieval shrine dedicated, according to tradition, to Narasimha. The latter include a crude handaxe and a cleaver-*cum*-chopper on quartzite, both rolled and patinated. On the other hand, the layer of cemented gravels (average thickness, 1 m.) mostly forming on the cliffs of water-courses in the region of Susunia, is the main horizon of Early Stone Age tools. The layer is mainly composed of quartz and quartzite besides laterite pellets alongside sticky mud, functioning as the binding material. By studying the features of the Dhankora and Gandhesvari, it was observed that the past changes of gradient or meander resulted in the formation of characteristic fan-gravels or re-deposition of gravels in younger contexts on slopes and valleys of streams around the Susunia hill.

The cemented gravel was followed by a sandy deposit of yellowish to ochre-red colour, occasionally containing pieces of quartzite, pegmatite and feldspar. Apart from the importance of this deposit as a recognizable horizon of the Middle Stone Age tools (pl. XLI B), a large number of fossilized or semi-fossilized skeletal remains of vertebrates were also obtained from the same deposit. An examination of these specimens, conducted by the pala-eontologists of the Geological Survey of India, in the Central Palaeontological Laboratories, identifies them with the fauna-assemblage of the Upper Pleistocene with some indications for earlier times. The following mammals were identified: (i) *Bubalus palaeoindicus* (part of horn-core and two partly-preserved portions of maxilla with molars and premolars); (ii) *Bos namadicus* (part of mandible with last tooth, M3); (iii) *Bos sp.* (isolated fragments of molars); (iv) *Palaeoloxodon namadicus* (partly preserved molars); and (v) *Equus namadicus* (isolated single molar). Besides these, there are several disarticulated fragments of upper and lower teeth mostly belonging to bovids. The precise identification of them is not possible due to their fragmentary nature.

According to the Palaeontologist-in-charge, most of the forms are closely related to the living ones. The absence of characteristic fossils and more complete specimens does not permit determination of specific age for the beds. However, an Upper Pleistocene age can be tentatively assigned. The indicated occurrence *of Bos namadicus*, however, renders the possibility of these beds being slightly older than Upper Pleistocene. It may be pointed out that the matrix associated with the fossils is only *kankary* in nature.

The fossiliferous stratum, as referred to above, had been followed by a layer of slightly

yellowish sandy earth with lateritic pellets scattered with gravels on the surface, which may be indicative of a wet phase of the recent age. Microlithic blades and flakes along with materials of the neolithic complex may be ascribed to this phase on the basis of their general occurrence on the sandy earth, but the border-line of the Late and Middle Stone Ages cannot be decisively established at present.

Middle Stone Age tools (pl. XLI B) recovered from Susunia and its neighbourhood included a small ovate-like tool with cleaver edge, a scraper-*cum*-handaxe with a hump crowning flake-scars of Acheulian origin, a side-scraper or cutter on pebble, a blade-*cum*-borer besides a hallow-scraper with a crooked end, a blade or knife with convex cutting-edge and a keeled scraper with nibbled retouches. The tools were made of locally available chert, flint and quartz, occassionally retaining in their diminutive form some of the traditions of the Early Stone Age. The assemblage also bore evidence of a blade-burin industry.

A good number of tools of Late Stone Age were discovered on high banks and terraces of the Bankajor, Dhankora and Gandhesvari in the vicinity of the hill of Susunia. These reveal an industry of both thin and sturdy blades, lunates, scrapers and flakes.

The neolithic assemblage from the region comprised ring-stones (pl. XLII B and C) as also large (pl. XLIII A) and small triangular celts (pl. XLII A). A small neolithic celt was found to be made of white agate with purple and red veins.

For a thorough investigation of the Susunia hill, some of its caves on steep cliff-sides were also explored. In the natural vault of one of them above Bharatpur, a number of human skeletal remains, including a frontal bone bearing light-brown patination, were recovered. These were examined in the Osteological Laboratory of the Anthropological Survey of India where it was found that 'as the greater part of medio-frontal suture, except the supra-nasal portion of the frontal bone, is obliterated, it indicates that the individual was below thirteen years of age.' No sex or race could, however, be determined from these specimens.

74. EXPLORATION IN DISTRICTS BANKURA, BIRBHUM, BURDWAN AND MIDNAPORE.—During the course of an intensive exploration, Mrs. J. Birmingham, Senior Lecturer in Archaeology of the University of Sydney, in collaboration with Shri V. Sen of the Eastern Circle of the Survey, surveyed a number of sites in the above Districts.

An immediate result of this survey has been the identification of chalcolithic black-and-red ware at several sites in Districts Bankura and Midnapore, confirming its distribution from Birbhum in the north to Tamluk in the south. Its occurrence at several of the so-called microlithic sites of the Ambikanagar region, at the junction of the Kasai and Kumari rivers, is particularly interesting (*1959-60,* p. 48). A number of pierced stones, probably weights for digging-sticks, were found at these sites. An early investigation of both the sequence and the nature of early settlement and agriculture in this region, much of which will shortly be submerged by the Kangsabati Project, is greatly to be hoped for.

Early historical pottery, characterized chiefly at the present stage of our knowledge by an eastern form (?) of the N.B.P. Ware and a silvery grey ware of very comparable shapes, mostly shallow bowls, was found in sufficient quantity at Mangalkot on the Ajay, Pokkarna on the Damodar, and at Tamluk on the Rupnarayan. The sites of Deuli and Kotasur (District Birbhum) also yielded pottery of this type. At Mangalkot, some early historical cast copper coins were presented by a local inhabitant.

A particular aim of this project was to attempt an analysis of the later pottery of West Bengal, much of which was collected. However, this, together with a fuller treatment of the earlier pottery, must await further study of the material. Information was

also gathered on the production and distribution of modern village pottery for comparative studies.

The visited sites are Bahulara, Bankura, Chatna, Chiada, Deuldanga, Dolbagan, Kankradara, Kechanda, Kudapara, Majia, Nandigam, Pareshnath, Pokharna, Serengarh and Sulgighat in District Bankura; Deuli, Haraipur, Jakherdanga, Kotasur, Mahishdal, Mundira, Pochiara and Surateswar in District Birbhum; Mangalkot, Pandu-rajar-dhibi in District Burdwan; and Astapara, Geonkhali, Organda, Silda, and Tamluk in District Midnapore.

Of these, the main sites yielding blade industries were Astapara, Chiada, Jakhcr-danga, Kankradara, Kechanda, Kudapara, Maldiha, and Tulsipur, while black-and-rcd ware came from Chiada, Deuli, Deuldanga, Haraipur, Kotasur, Mangalkot, Mundira, Mahishdal, Nirbhaitala, Pandu-rajar-dhibi, Surateswar, Tamluk and Tulsipur.

The Department of Archaeology, Government of West Bengal, explored the valleys of the Bakresvar and the Kopai in District Birbhum and obtained a sequence of Stone Age sites yielding Middle and Late Stone Age implements of Giridangal formerly discovered by the Directorate. While the site was revisited, a new site was discovered at Chinpai. The main horizon of the Middle Stone Age tools at both the sites appears to be the reddish sandy earth, mixed with laterite and small gravels and of the Late Stone Age, the succeeding yellowish sandy earth lying below the humus.

The tools of Middle Stone Age recovered from these sites consisted of scrapers, points and blades of chert and red jasper. The Late Stone Age industry was represented by small blades, points, flakes and cores.

During the course of an exploration at Tamluk on the Rupnarayan in District Midnapore, the Department of Archaeology, Government of West Bengal, collected from the area of Khatpukur a few sherds of black-and-red ware and a fragment of what appeared to be a slipped bowl of coarse grey fabric. In this connexion the ancient locality of Amarshi in the valley of the river Kaliaghai was also explored and found to be a site of some importance as evidenced by the discovery of a few microlithic flakes and a scraper, besides a terracotta mother-goddess in archaic style and a set of medieval sculptures. Other findings from the District included a shouldered copper celt from Chatla (pl. XLIII B), close to the sea.

75. EXPLORATION IN DISTRICT PURULIA.—Dr. A. K. Ghosh, accompanied by Shrimati Ranjana Das and Shri A. N. Basu of the Prehistory Section of the Department of Anthropology, University of Calcutta, discovered a site, on the left bank of the Subarnarekha, a few km. downstream from Muri, yielding both Early and Late Stone Age tools. The area revealed some terrace-like formations. Field-observations, however, indicate that the bench-like out-crops of bed-rock were covered by ' deposits; some parts of them were also eroded by river activities. This was evidenced by conspicuous results of aggradational and degradational activities of the river. On the high banks above the present-day flood-plain, the stratigraphic evidence is clearly marked Bed-rock (0.30 to 1.52 m.) consists of granite which at places has turned to mottled clay (0.91 m.) of different shades. This bed is covered by a thick bed of gravels (0.45 m.) both rounded and angular. The next upper bed is formed of yellowish brown soil (0.68 m.). It is again covered by a layer of *kankar.* A deposit of red soil, capped by alluvium, overlies the *kankar.* On the high banks, the *kankar*-deposits are found to be exposed at some places and the adjacent region is strewn with small pisolitic nodules

Early Stone Age implements like crude choppers, associated with flakes, were found

on the slope of the hillock. They are stained red and are supposed to have been embedded within the talus-deposit. Acheulian handaxes and cleavers were also obtained. These are probably coming out from the bed of angular gravels. The tools are moderately weathered and rolled.

Late Stone Age tools were found on the surface, where the brown soil has been eroded and *kankars* arc exposed. They are made mostly on crypto-crystalline silica, like cherty material, jasper, chalcedony, etc. The typology includes blades, scrapers, trapezes and cores.

76. EXPLORATION IN DISTRICT 24-PARGANAS.—The Department of Archaeology, Government of West Bengal, conducted further exploration at Deulpota, on the Bhagirathi near Diamond Harbour, and collected tools and flakes of Middle Stone Age along with a piece of shell, probably of *Ostrea* of recent geological age. During this exploration, a lime stone containing *Nummulites, Assilina* and *Alueona* was also discovered. According to Shri M. V. A. Sastry, Palaeontologist-in-Charge, Geological Survey of India, the origin of this may be from the Eocene in Assam.

77. EXCAVATION AT CHANDRAKETUGARH, DISTRICT 24-PARGANAS.— The Ashutosh Museum of Indian Art, University of Calcutta, under Shri C. R. Roychowdhury, continued (*1964-65,* p. 52) excavation at Chandraketugarh in three areas, (i) the eastern part of the Khana-Mihirer-dhipi, (ii) Itakhola and (iii) Noongola, a site falling midway between Khana-Mihirer-dhipi and Itakhola.

Operations at Khana-Mihirer-dhipi exposed the entire eastern part of the outer wall (pl. XLIV A) of the main temple with all the three structural phases, one of which belongs to the Gupta and the remaining to two post-Gupta periods. In all the three phases, shallow niches with strings of dentils and lotus petals of moulded bricks, respectively at the top and bottom, similar to those on the western side, were found. In the last phase, when the use of stucco mouldings of the earlier phases was discontinued, alternate niches were decorated with chiselled bricks at their centre to give the effect of trellis-work. The deposits of the Gupta period yielded: typical ritual pottery; the lower part of a small sandstone Surya plaque; a stone inlaid silver and a plain copper ring; some terracotta and stone beads and saddle-quern with pestle. From the immediate post-Gupta levels were obtained: a mutilated bust of Vishnu in sandstone; black basalt *chakra* of Vishnu; some fragments of stucco architectural decoration; conch-shell bangle-fragments and ritual pottery.

The stretches of the structural complexes of the main temple at Khana-Mihirer-dhipi, exposed this season in the eastern portion of the mound, were very badly damaged through brick-robbing, and at places existed only in foundations.

Digging at Itakhola was undertaken mainly with a view to reaching the natural soil and to establishing the full cultural sequence of the site. Excavation revealed that the earliest habitation at the site was represented by the typical N.B.P. Ware, associated with shallow grey dishes and bowls, silver and copper punch-marked coins, terracotta and stone beads, and bones of fish and domestic animal bones. The succeeding Periods, which followed without any break in occupation at the site, represented Sunga, Kushan, Gupta and post-Gupta deposits, labelled Periods II, III, IV and V. Period II was distinguished by typical Sunga wares, terracotta figurines (pl. XLV A, C and D), jewellery pieces, ivory objects and ill-baked tile-fragments, used for roofs of mud-houses. Period III was marked by typical ceramics associated with the Rouletted Ware, terracotta figurines of bewildering variety and interesting house-complexes of rammed *surkhi* floors, wattle-and-daub walls

with heavy wooden pillars at corners, well-baked tile-roofs and terracotta ring-wells. The houses usually face south. Period IV showed more structural details of *kachcha* houses, typical of the earlier period. Brick structures in regular alignment possibly belonging to the wealthy section of the society, were found. The upper two Periods at Itakhola V and VI, so well-established at Khana-Mihirer-dhipi area, were extremely disturbed perhaps resulting from regular cultivation, and could not thus be successfully recovered.

Excavation at Noongola confirmed the sequence of Itakhola. A noteworthy feature in Period IV (Gupta levels), however, was the existence of a 10 to 15-cm. thick layer of sandy clay, possibly flood-borne. No such deposit was met with at Itakhola due to the disturbed condition of the upper strata. As the excavation at Noongola was restricted only to two 6.09 m. square trenches, sufficient details of different Periods could not be recovered. Among the beautiful and unique terracotta figurines belonging to Period II may be mentioned a toy-cart, showing a demon chewing a cobra and holding an elephant for the next item on his menu (XLIV B) and a winged elephant toy-cart. Of Period IV, remnants of brick structures and a ring-well, made of thick and large terracotta rings, merit our attention.

A trial-digging was also made at Hadipur, a village outside the fortified area of Chandraketugarh. The lowest level that could be reached at Hadipur this year dates from the beginning of the Christian era, corresponding to Period III of Chandraketugarh. The later periods conform to those at Itakhola region. The so-called period III of Hadipur yielded elaborate house-complexes of wattle-and-daub type with tile-roofs, mud-floors, grain storage enclosures and ring-wells, forming a self-contained unit possibly of a family. Among noteworthy finds mention may be made of some beautiful terracotta figurines including a female holding a pair offish (pl. XLV B), an elephant-rattle in the round, pottery-types associated with the Rouletted Ware, terracotta balls, beads of stone, awls of ivory and bone, copper bowls and wooden decorative pieces. The material remains of the upper periods could not be differentiated from those of Chandraketugarh proper.

n. EPIGRAPHY

SANSKRIT AND DRAVIDIC INSCRIPTIONS[1]

ANDHRA PRADESH

1. VIJAYANAGARA INSCRIPTION, BETAPALLE, DISTRICT ANANTAPUR.—Dated in Saka 1457 (A.D. 1535) in the reign of Achyutaraya, the inscription records the reinstatement of an earlier grant of the village Arasinenipali, made by Saluva Timmarasu for the *amritapadi* and other services of god Tirumaladeva of Betapalli by Yaramaraju, son of *Mahamandalesvara* Timmayadeva-Cholamaharaja of Chadalavada.

2. VIJAYANAGARA CHARTER, GORANTLA, DISTRICT ANANTAPUR.—This charter, dated Saka 1339, Jaya (A.D. 1418) in the reign of Devaraya I, records the grant of Kamchikumta renamed as Bakkapura to eight *brahmanas* by Bukkamba, with the consent of her husband Ramachandraraya, son of Devaraya I. It refers to the prince's campaign in Andhradesa undertaken on the orders of the king. This grant mentions Ramachandraraya with his wife Bukkamba for the first time.

3. INSCRIPTION, PUDUR, DISTRICT MAHBUBNAGAR.—This Kannada inscription, engraved on the upper and lower frames of the Gaja-Lakshmi panel fixed into the wall of the *mandapa* near the Siva temple outside the village, is dated Saka 848, Sarvajit (A.D. 926-27) and states that it was caused to be made by Poravana-gavunda.

4. CHARTER, TEKKALI, DISTRICT SRIKAKULAM.—One set of two copper-plates of the time of Indravarman of Eastern Ganga dynasty was discovered.

DELHI

5. MINOR ROCK EDICT OF ASOKA, NEW DELHI.—Engraved on the rock near Amarpuri and Srinivasapuri, the extant portion of this inscription contains part of a version of the Minor Rock Edict which is more or less similar to the Bairat version.

GOA, DAMAN AND DIU

6. CAVE-INSCRIPTION, ARVALEM, BICHOLIM.—This label-inscription, in Sanskrit and in southern characters of about the sixth century A.D., is engraved on a slab set up in the third shrine in Cave 3. It reads *Sambaluruvasi Ravih.*

7. INSCRIPTION, NUNDEM, SANGUEM.—This inscription, in Sanskrit and in southern

[1] Information from : 4 and 36, the Director of Cultural Affairs, Orissa State ; 8 and 20, the Director of Archaeology, Kerala State; 12 and 15 (also the Government Epigraphist for India), Prof. K. D. Bajpai; University of Sagar ; 29. the Director of Archives and Archaeology, Maharashtra State (also the Government Epigraphist for India) and the rest, the Government Epigraphist for India.

characters of about the sixth century A.D., is engraved on a slab lying outside the Mahamaya temple. It records the grant of a doorway *(dvara)* to the temple of Paryatisvamin and of another doorway and a plot with jack-trees of Elasvamin by Siharaja (Simharaja).

KERALA

8. INSCRIPTION, MARAYUR, DISTRICT KOTTAYAM.—The Tamil inscription refers to Methalaipperumal who donated some works in the temple.

9. INSCRIPTION, VELLUR, DISTRICT KOTTAYAM.—This damaged inscription, in Tamil language and Vatteluttu characters, (pl. XLVI A) engraved on a stone built into the wall of the *prakara* of the Vishnu temple, is dated in the 1510707th day of Kaliyuga, the 29th day of Mina, Magha and Saturday. The details correspond to A.D. 1035, March 22. The days quoted in the inscription were expired *(senra).* The record seems to refer to the construction of an *ambalam.*

MADHYA PRADESH

10. INSCRIPTION, DURG, DISTRICT DURG.—Written in Brahmi characters, assignable palaeographically to the second century A.D., the inscription on a stone reads *Ghariniya Saminikya chhaya.*

11. FOUR BUDDHIST INSCRIPTIONS, PHOPHNAR-KALAN, DISTRICT EAST NIMAR.—Engraved on the pedestals of four well-preserved standing Buddha bronzes, these inscriptions in southern characters of about the sixth century A.D. record the gift of the respective images by Nagabhuti, *Sakyabhikshuk-acharya-bhadanta* Buddhadasa, Vidyadharasvamini, the mother of *Mahapratihara* Anandavatsa, and Kanha.

12. INSCRIPTIONS, DISTRICT MANDASOR.—A stone pillar in Chandvasa bears a votive inscription dated v. s. 1836 and Saka 1701 (A.D. 1779). Four inscriptions were discovered in Jiran. One of them, dated in *Vikrama-samvat* (A.D. 1008), refers to the construction of a temple at Jiran during the reign of the Guhilot rulers.

13. INSCRIPTION, KHIMLASA, DISTRICT SAGAR.—This inscription, in corrupt Sanskrit engraved in Nagari on a *sati* stone, is dated Vikrama 1534 (A.D. 1477) in the reign of Rajadhiraja Sultan Ghiyasu'd-Din Ghalasi, i.e., Ghiyasu'd-Din Khalji of Malwa. It records the performance of *sati* by a lady.

14. MUGHAL INSCRIPTION, KHIMLASA, DISTRICT SAGAR.—An inscription, dated Vikrama 1692 and Saka 1556 (A.D. 1634), refers to the performance of *sati* by the wife of an oilmonger *(teli)* when Shah Jahan invaded Orcha.

15. CHANDELLA CHARTER, RAMVAN, DISTRICT SATNA.—This is a single copper-plate with writing in Nagari characters and Sanskrit language, engraved on one side only which is now preserved in the Museum at the place. The record belongs to the time of Chandella Trailokyavarmmadeva and is dated Vikrama 1283 (A.D. 1226). It records a royal grant of the village Patisa included in the Varahi-*vishaya,* to a number of *brahmanas* belonging to different *gotras.*

MADRAS

16. INSCRIPTION, APPAKKUDAL, DISTRICT COIMBATORE.—This damaged inscription in Tamil characters of about the fourteenth century, dated in Kalayukti, records an under taking given by the *nattavar* of Vadakarai-nadu in Kongumandalam to Mahapradhanam Irumadi Rahuttaraya-Madappa-dennayakkar in connexion with an endowment of a village, probably Appakkudal, to provide for various offerings, evidently to the local deity on the occasion of Sitakaragandan-*sandhi*.

17. VIJAYANAGARA INSCRIPTION, AVALPUNDURAI, DISTRICT COIMBATORE.—Dated in the year Ananda in the reign of Achyutadeva-maharaya, the inscription mentions *Tantrasara* Nanjaya-Tammayan as the *Karyakatta* of Ramaraja who is referred to as the *Sekapradhani* (*jagapradhani*) of the king.

18. INSCRIPTIONS OF KONGU RULERS, KADAIVUR, DISTRICT COIMBATORE.—Of the four inscriptions on the walls and tiers of the base of the Kadesvara temple, in the village belong ing to the reign of the Kongu king Vikrama-Chola, three record endowments of money made by individuals of the Vellala community belonging to the Porulandai or Pullandai group, for maintaining lamps in the temple. The fourth, dated in the thirteenth year of the same king's reign, seems to record the construction of eight *pithas,* the kitchen and the trough for *nirmalya* by a member of some community.

19. INSCRIPTION, ULAGADAM, DISTRICT COIMBATORE.—This Tamil inscription, dated in the twenty-fourth year (A.D. 1231) of Vira-Rajendradeva of Kongu, records the cons truction of a shrine and also the setting up of an image of Kunramerinda-pillaiyar, i.e., Subrahmanya therein by Karunchokkan-Valiyachokkan of the Kallaivettuvar community in Ulagavitankam.

20. INSCRIPTION, SUCHINDRAM, DISTRICT KANNIYAKUMARI.—This Tamil inscription, engraved on the south wall of the Chempakaraman-mandapa in the Sthanuntha temple, records the institution of *kalasandhi-puja* in the temple.

21. PANDYA INSCRIPTION, KILKUDALUR, DISTRICT MADURAI.—This Tamil inscription, dated in the thirty-ninth year (A.D. 1306) in the reign of Kulasekhara (I), records the grant of land for worship and offerings to goddess Aludaiyanachchiyar of Purnagiri by Tirunilakantan Rajakkanayan *alias* Tondaiman. Legend connects this goddess with Kannaki, the heroine of *Silappadikaram.*

22. BRAHMI INSCRIPTION, TIRUVADAVUR, DISTRICT MADURAI.—Two inscriptions in Tamil language and in Brahmi characters (pl. XLVI B) of the third-second century B.C., engraved on the brow of a natural cavern, mention two individuals, one of whom is referred to as an *upachan.*

23. PANDYA INSCRIPTION, SRIVILLIPUTTUR, DISTRICT RAMANATHAPURAM.—This Tamil inscription, engraved on a stone at the entrance into the Lakshminarasimhasvamin shrine, in Vatteluttu characters of early tenth century, is dated 2 + 5th year of Sadaiya-Maran (Rajasimha II). It records the naming of a sluice north of the big tank at Parankusapputtur and a channel from the same after Arulakki, whose full name and designation are given as Sankaran Muri Arulakki, the *kilavan* of Anmur-nadu, by the *mahasabha* of Villiputtur.

24. INSCRIPTION, SRIVILLIPUTTUR, DISTRICT RAMANATHAPURAM.—Dated in Saka 1512, Vikriti (A.D. 1590), this inscription in Tamil records an order of the deity Godadevi addressed to Visvanatha-nayakka Virappa-nayakka granting lands under a tank called Bommaikkulam *alias* Tirumalirun-jolaip-pereri re-named after Virappa-nayaka for the worship in and maintenance of the servants of the temple of Tirthakkarai-Alagar.

25. INSCRIPTION, JAVANGONDAN, DISTRICT SOUTH ARCOT.—This Tamil inscription dated Saka 1425, Rudhirodgarin (A.D. 1504) on a broken pillar, lying in the village, records a benefaction by one .*suryat*-Tondaimanar, whose eulogy given in the record bears comparison with that of Anandat-tandavapperumal *alias* Tondaimanar, referred to in a record from Chidambaram, dated Saka 1400, Vilambi.

26. CHOLA INSCRIPTION, CHAKKARAPPALLI (AYYAMPETTAI), DISTRICT THANJAVUR.—This Tamil inscription, engraved on the south wall of the Chakravahesvara temple in characters of the tenth century, is dated in the reign of Rajakesarivarmman (Rajaraja I). It refers to the floods in the river Kaveri in the fifth year in the reign of Ponmalaigait-tunjina Rajakesarivarman (Sundarachola). It records the sale of land to be reclaimed from the flooded parts for worship in the temple of Suryadevar built at Tiruchchakkarappalli by Adittan Suryan *alias* Sembiyan Po(y*)gainadu-kilavan of Vettakkudi, by the *sabha* of Agalimangalam, a *brahmadeyam* in Kilar-kurram.

27. INSCRIPTIONS, KUMBAKONAM, DISTRICT THANJAVUR.—Two fragmentary Tamil inscriptions were found built into the structure in the Somesvarasvamin and Kumbhes-varasvamin temples. The one in characters of about the ninth century in the former temple, records a grant of land for food-offerings to god Somesvarattu-madevar, entrusted to the hands of a body called *Tiruvona-ganattar.* The other, in the latter temple, in characters of the tenth century, records the provision made for the food-offerings to some deity by Aramba-nandi of Tiyangudippali in Inga-nadu.

28. Two CHOLA INSCRIPTIONS, TIRUVENGIMALAI, DISTRICT TIRUCHCHIRAPPALLI.—The first inscription in Tamil, dated in the sixteenth year (A.D. 1126) in the reign of Rajaraja (II) records an endowment of land made by Alagiyan-meyvelaikkarap-pallavaraiyan, one of the *Agambadimudaligal* of Chattan Chediyarayan for the latter's merit to provide for worship on specified occasions to Subramanyappillaiyar in the Mangalavidi in Jayan-gondachola-chaturvedimangalam. The land is stated to have been purchased from Balas-rayan Tirunattapperumal *alias* Tirukkalirruppadi-nambi. This name reminds of the Tamil Saivite work *Tirukkalirruppadiyar.* The second record, also in Tamil, dated in the thirty-ninth year (A.D. 1218) of Kulottunga III, records the sale of land by the *mahasabha* of Jayangondachola-chaturvedi-mangalam to Uyyaninraduvan-Vilumiyar for an endowment by the latter for worship and offerings to the images of Aludaiya-pillaiyar (Jnana-sambandha), Tirunavukkarasudevar, Alalasundarapperumal and Tiru-Narkiradevar, set up by the donor himself in the temple of Tiruvingoy-Aludaiyar. This Narkiradevar is known to be the author of the work *Ingoymalai-elupadu* in praise of the local deity.

MAHARASHTRA

29. SILAHARA CHARTER, THANA, DISTRICT THANA.—Dated in Saka 961 (A.D. 1038), this Sanskrit charter of king Nagarjuna of North Konkan engraved in Nagari, records a

grant of the village Munjayali in Koriyala-12 to Madhavapandita, son of Gokarna-pandita hailing from Hastigrama in Madhyadesa. The grant village is stated to have yielded an income of three hundred *drammas* annually. This is the only charter of this king so far known.

MYSORE

30. HERO-STONE, GOVERNMENT MUSEUM, BANGALORE.—Depicting a warrior holding a bow in his right hand and an arrow in his left, standing in front of another who has fallen, the stone, from Begur, bears a Kannada inscription in characters attributable to about the ninth century recording the death of an individual. A fragment, also from Begur, in similar characters mentions Chandayya.

31. INSCRIPTION, ARLIHONDA, DISTRICT DHARWAR.—Engraved from the bottom upwards in Kannada characters of about the seventh century, this inscription (pl. XLVII A) states that while Pittiamman was ruling, Kannasaktiarasa made a grant of land. Konne-reyangal figures probably as the executor of the gift. These chiefs are hitherto unknown.

32. INSCRIPTION, MAVALLI, DISTRICT DHARWAR.—This incomplete inscription in Kannada, engraved on a pillar lying near a dilapidated structure and palaeographically assignable to the ninth century, states that while Ganda-maharaja was ruling over Palasige-12000, Chandapa was the heir-apparent and Mahavalli was being administered by the *Muvadimbaru.* The identity of this Ganda-maharaja is not known.

33. THREE KADAMBA INSCRIPTIONS, DISTRICT DHARWAR.—A damaged inscription from Mavalli, engraved on another pillar in the same place as item 32 above, is in Kannada characters assignable to the ninth century. It mentions Rachchaya-Kadamba and Palasige-12000, probably as the territory held by him. The name of this Kadamba ruler was hitherto unknown. The second inscription, in Kannada characters of the twelfth century, from Siddanabhavi engraved on a slab set up in a field belongs to the reign of Jayakesi and registers a grant of land to god Sangamesvara by *Samanta* Kagga *alias* Kargana *alias* Heggade Kavana, son of Kesava and Padmiyakka. It refers to a *danda-nayaka* (name lost) as ruling over Tammiyuru, Pannirppalli, Mavalli, Kode, Kiruvatti, Yammeyanabavi and Nelkunda. The third epigraph also in Kannada from Bammigatti dated Saka 1069 (A.D. 1147) in the reign of Permadideva, son of Jayakesi is engraved on a slab kept in the compound of the Panchayat Office in the village. It states that Permadideva was ruling over Palasige-12000 and Konkana-900. It contains also an eulogy on *Maha-samanta* Suri-yamayya *alias* Suriga stated to be administering Bharani-12, Kampile and another division (name lost). It records the construction of a *fina-bhavana* at Honnehalli by his minister Singa and grants of land, house-sites and oil for a lamp by him, which were made over to Anantavirya-siddhanta-munisvara of Yapaniya-*samgha* and Kandur-gana.

34. CHALUKYA INSCRIPTIONS, DISTRICT DHARWAR.—The first inscription, in Kannada, from Malkankoppa engraved on a slab set up near the plinth made of rubble stone masonry, on the bank of a tank, is dated Saka 1026 (current), Subhanu (A.D. 1103) in the reign of Tribhuvanamalla Vikramaditya VI. It records grants of lands, gardens, etc., to the Jaina *basadi* constructed by the donor Bammisetti of Huligodu while Guhalladeva was adminis-tering the area. The grants were made over to Santiviradeva of Yapaniya-s*angha*, Maidap-*anvaya* and Kareya-*gana*. It also records the gift of a gong by *Ekkoti-chakravartigal.* The

second inscription from Mavalli, also in Kannada, belongs to the reign of Vikramaditya VI and is dated Visvavasu. The inscription is important since it mentions for the first time *Mahamandalesvara* Hakiballadeva, the husband of Padmaladevi, the elder sister of Jayakesi, the son-in-law of the Chalukya king. It records the construction of a Jaina *basadi* for Santinathadeva and grants of land and oil-mill by Barmachayya, the minister of Hakiballadeva. The third inscription from Tamburu, engraved on a slab lying near the bastion of the fort outside the village, dated in Visvavasu also refers to Jayakesi and Hakiballadeva who is stated to be ruling Banavasi-12000. It records the construction of a *basadi* at Tammiyuru and grants made to it by the brothers Barmachayya and Rachamalla-nayaka, the ministers of Hakiballadeva. The grants were made over to Meghachandrapanditadeva of Mula-*samgha* and Surastha-gana. It also records gifts made by the *Nakaras, Telligas* and the *parnopajivikas* to the same *basadi.* The fourth inscription, engraved on the same slab and dated Saka 1091 (A.D. 1169), does not quote the king's name. It records assignment of income from taxes to the Jaina *chhatra* of Padumaladevi, evidently the elder sister of Jayakesi and the wife of Hakiballadeva. The fifth inscription from Mavalli, belonging to the reign of Bhulokamalla, is dated Pingala. It records a gift of land to the *basadi* constructed by Barmachayya mentioned above made by Bandhuvarmayya, the *Vaddavyavahari* of Panumgal. The latter is stated to have offered his respects to Madirajayya-dandanayaka and Narasimgadeva (cf. *1964-65,* p. 61, item 60.)

35. HERO-STONE INSCRIPTIONS, DISTRICT DHARWAR.—Eleven inscriptions on hero-stones copied from Kalghatgi Taluk in Kannada characters of the twelfth-thirteenth century, reflect the disturbed conditions during the period. Of these, one from Devikoppa records the death of Havina Macheyanayaka after killing mounted soldiers on the occasion of a siege of Mavalli. It mentions *Mandalika* Mallarasa. Another from Tamburu records the death of Hiriya-Rama in the course of the siege of Sateyanahalli and the setting up of the stone by his elder sister, Malliyabe-nayakiti. The third, from the same place, dated Saka 1150, expressed by chronogram (A.D. 1228) states that Maileya-nayaka, on the orders of his master Vira Permadiraya, attacked Mayideva, routed him and fell in the fight.

ORISSA

36. COPPER-PLATE CHARTERS, DISTRICT PURI.—One set of three copper-plates of Dharmaratha of Somavamsi dynasty discovered from Khandapara was acquired. Another copper-plate of Eastern Ganga, Narasimha IV, was discovered from Sankarandamatha (Puri).

PONDICHERRY

37. CHOLA INSCRIPTION, NEDUNGADU, COMMUNE KARIKAL.—This Tamil inscription, dated in the 37th year (A.D. 1215) in the reign of Tribhuvanaviradeva (Kulottunga III), records an agreement executed by the *devarkanmis* of the temple to maintain a lamp out of the interest on the endowment of three hundred *kasu* created by a member of the community of *Tirunilakandattar.*

38. FOUR CHOLA INSCRIPTIONS, TIRUNALLAR, COMMUNE KARIKAL.—An inscription in Tamil, engraved on the north wall of the central shrine in the Darbharanyesvara temple, is dated in the 34th year (A.D. 1052) in the reign of Vijayarajendra 'who captured Kalyana-

puram and Veligramam', (Rajadhiraja I). It records the grant of land, probably by the temple authorities, to Srikantan Kamban *alias* Abhimanameru-nadakap-peraraiyan who had the rights of lease for *Ariyakkuttu,* and to the sons of Srikantan Arangan for staging its five acts, on the occasion of each of the two festivals in Masi-makam and Vaikasi-visakam in the temple of Tirunallar-udaiyar. Provision was also made for wages, oil, and powder for make-up of the actors on the occasions. Another inscription belonging to the thirty-first year of the reign of the same king records an investment of forty-five *anradunarkasu* fetching by way of interest annually forty-five *kalam* of paddy to provide for the daily offerings to the deity during the early morning service, while a third inscription of the reign of Kulottunga I refers to an investment of five hundred and sixty *kalam* of paddy fetching an annual interest of two hundred and eighty *kalam* to maintain a *matha* and to feed the Saiva ascetics therein. The fourth inscription records an endowment of land by Ponnalvan-Nachchinarkiniyan of Dipangudi for food-offerings on the days of the asterism Bharani in the months of Chittirai and Aippasi to the deity Tirunallar-udaiyar. The land was made tax-free by the *urar* of Nelvaychcheri-Anapayamangalam.

39. PANDYA INSCRIPTION, TIRUNALLAR, COMMUNE KARIKAL.—An inscription, dated in the fourth year (A.D. 1306) of the reign of Jatavarman Sundarapandya, records the sale of the *samudayappani* in the temple to a Sivabrahmana for fifty *pana* by the temple-authorities, the money to be utilized for making ornaments to the deity.

40. INSCRIPTION, TIRUNALLAR, COMMUNE KARIKAL.—This inscription, in Tamil characters of the twelfth century, engraved on the second tier of the base of the Tyagaraja shrine in the same temple as is mentioned in item 39 above reads *Viramohan Kadavarayan Alagiyanambiratti,* perhaps the name of the founder.

RAJASTHAN

41. BRAHMI INSCRIPTION, NOH, DISTRICT BHARATPUR.—A broken bowl discovered during the excavation (*1964-65,* p. 35) contains writing on its base. Written in Brahmi characters attributable to the third-second century B.C., it seems to contain names of persons, engraved in successive periods. It also contains the expressions *pachasatavatiku (pamchasatavatika?)* and *negata* perhaps standing for *nigatha (nirgrantha).*

42. CHAHAMANA CHARTER, NADOL, DISTRICT JODHPUR.—This charter dated Vikrama 123(7) (A.D. 1180) records the assignment, by prince Jayantasimha, of eight *drammas* from the *udranaka* annually to be made over by the *mahajanas* of Simapati for food-offerings to Parsvanathadeva of Analavihara in Analapura on the occasion of the Kalyanikamahotsava in Pausha. The village Simapati is stated to be in the enjoyment of the prince *(kumara-pada-bhujyamana)*. No other copper-plate has been known so far of this prince.

43. INSCRIPTION, KOKHAR, DISTRICT NAGAUR.—This inscription, dated Vikrama 1539 (for 1593) and Saka 1459 (A.D. 1537), engraved on a pillar in a field is in corrupt Sanskrit written in Nagari characters. It refers to the setting up of a *kirtti-stambha* in Ghoghara-grama, obviously identical with Kokhar.

44. INSCRIPTIONS, PARBATSAR, DISTRICT NAGAUR.—An inscription in Sanskrit, in Nagari characters and dated Vikrama 9.., records the death of Savadu, wife of Kavila.

Another inscription, also in Sanskrit engraved in Nagari characters, belongs to the reign of *Maharajadhiraja Paramabhattaraka Sulatana* Mahamuda Sahi (Muhammad-bin-Tughluq) and is dated Vikrama 1389 (A.D. 1332). The inscription proves that the authority of the Sultan was acknowledged in and around Parbatsar in Rajasthan.

UTTAR PRADESH

45. GAHADAVALA GRANT, GORAKHPUR, DISTRICT GORAKHPUR.—This charter in Sanskrit, engraved in Nagari, is dated Vikrama 1176 (A.D. 1120) in the reign of Govinda-chandra. It records the grant of Chimana-Sivachaliya-pataka in Sachavara by the king from his camp at (Bha)dasa to Sri Dhirisarman of the Vatsa-*gotra* and of the Vatsa-Savarnna-Amgirasa-Daivala-Bharggava-p*ravara*.

46. Two BUDDHIST IMAGE-INSCRIPTIONS, MATHURA.—Engraved on the pedestal of a broken image of a standing Buddha, one of these inscriptions (pl. XLVII B), in Brahmi and in mixed dialect, belongs to the reign of the Kushan emperor Vasudeva and is dated in the ninety-third year of the era (A.D. 171). It records the installation of the image of the holy Pitamaha together with an umbrella by the *Kayastha* Sramana after having honoured the venerable Dharmesvara, etc. and (his parents) Sarvanandin and Jivasri. The second inscription in Sanskrit, engraved on the pedestal of another broken image of standing Buddha, belongs to the reign of the Gupta emperor, Kumaragupta. It is dated in the year 125 of the Gupta era (A.D. 444) and records the gift of the image by a person whose name seems to read Kumaradasabhatta.

ARABIC AND PERSIAN INSCRIPTIONS[1]

ANDHRA PRADESH

1. INSCRIPTION, DISTRICT KURNOOL.—An epigraph from the Jami-Masjid, Adoni, inscribed in the time of Mas'ud Khan (*circa* A.D. 1667), quotes the name of its designer, Jalal, son of Shaikh Mahmud, who seems to be a calligraphist of sufficient merit, not known from other sources.

BIHAR

2. INSCRIPTION OF THE MUGHALS, DISTRICT PATNA.—An inscription of the time of Shah Jahan from Patna, composed by Diya'i, assigns the erection of a mosque on the bank of the Gang (i.e. Ganges), in A.H. 1042 (A.D. 1632-33) to Shaikh 'Abdu'l-Karim.

3. INSCRIPTION, DISTRICT PATNA.—An epitaph from Manhanwan records the demise of Shaikh 'Abdu'r-Rahman, better known as Mir Wa'iz, a son of Sayyid Ahmad Bukhari, which occurred in A.H. 991 (A.D. 1583).

KERALA

4. MISCELLANEOUS INSCRIPTIONS, DISTRICTS CALICUT AND CANNANORE.—Eight epitaphs from Kollam in Calicut District, ranging in their dates between A.H. 629 (A.D. 1232) and A.H. 696 (A.D. 1296-97), register the dates of the demise of Shaikh'Abdu'r-Rahman Hasan, son of Muhammad Kamalu'd-Din 'Umar, son of Raihan and others. At Madayi in Cannanore District, was found an epitaph, according to which 'Abdu'r-Rahman, son of Muhammad and grandson of 'Ali, son of Ruzbih, who is reported to have been a great scholar and theologian of his time, died in A.H. 672 (A.D. 1274). Another epitaph from the same place refers to the death of Najibu'd-Din 'Abdullah, son of 'Isa and grandson of Abi Tahir a't-Takriti which took place in A.H. 684 (A.D. 1285). A thirteenth-century bilingual, but unfortunately damaged record from Calicut mentions Shibabu'd-Din Raihan, a freed slave of one Mas'ud, the deceased, who purchased land and constructed thereon a mosque, a well and also an edifice to provide for the maintenance of the *imam* and *mu'adhdhin.* An inscription from Chaliyam in Calicut District assigns the reconstruction of a mosque in A.H. 756 (A.D. 1355) to one Muhammad, son of Ahmad, entitled Kunj Baidal, well-known as Koya Mutti. An epitaph from Paravanna, in Calicut District, record ing the death of Mahmud of Sindapur in A.H. 889 (A.D. 1484) mentions him as a learned theologian. Two inscriptions from a mosque at Calicut refer to two high port officials, Khwaja Shah-Bandar (literally Prince of the Port) 'Umar al-'Antabi and Khwaja Shah-Bandar Jamalu'd-Din al-'Antabi who respectively got made the (wooden) pulpit of the mosque in A.H. 1088 (A.D. 1677-78) and got it remade, after it got burnt. The second record is undated but can be assigned to the late seventeenth or early eighteenth century. In an epitaph from Quilandy in the same District, which records the demise of Sayyid Muhammad in A.H. 1160 (A.D. 1747), his pedigree is traced to Muhammad, the author of

1 Information from Dr. Z. A. Desai, Superintendent, Persian and Arabic Inscriptions of the Survey, who, assisted by Shri S. A. Rahim, Shri A. A. Kadiri and Shri M. F. Khan, Epigraphical Assistants, found and copied, examined and reported on about six hundred inscriptions during the year, including those described above.

Mirbat. The latter's grandson and great-grandfather of the deceased is also mentioned as a great theologian and saint.

5. INSCRIPTION OF THE RAJAS OF CANNANORE, DISTRICT CANNANORE.—An inscription from Cannanore relates that a mosque first constructed in A.H. 873 (A.D. 1469) by Mapilla 'Isa was rebuilt by Muhyiu'd-Din in A.H. 1288 (A.D. 1813) by the order of the chief, 'Abdu'l-Qadir Ali.

MADHYA PRADESH

6. INSCRIPTION OF THE CHANDERI CHIEF, DISTRICT GUNA.—A unique record (pi. XLVIII A) of the Ghanderi chief, Qadir Khan, was found at Chanderi. It assigns the cons truction of a mosque in A.H. 818 (A.D. 1416) to Timur entitled Jawad (literally generous), who appears to have been a governor of the place.

7. INSCRIPTIONS OF THE MUGHALS, DISTRICTS GUNA, GWALIOR, SHIVPURI AND VIDISHA.—An inscription from Narwar in Shivpuri District, pertaining to the reign of Akbar, assigns the erection of a mosque in A.H. 979 (A.D. 1572), to the great Khan, Mirak Ahmad Khan of Kulab, who was, according to another inscription from the same place, the governor of the place. In a record, dated A.H. 1014 (A.D. 1606), in the reign of Jahangir, from Udaypur in Vidisha District, which assigns the construction of a mosque to Khwaja Barawan, son of Bahadur Khan, Raja Bikramajit, son of Bharathi Ghand, is mentioned as the governor. A bilingual record of the time of Shah Jahan, from the same place, refers to Damodar Das and Gokul Das, sons of Haridas *qannngo,* as having constructed a well. Of the two inscriptions of Aurangzeb, one from Chanderi, dated in the thirty-first regnal year (A.D. 1686-87), records the construction of a mosque; the name of the builder, Malik Musalman, who must have been an official, is rather unusual. The second, a damaged and frag mentary record from Gwalior, dated six years later, records the name of the holder of the *jagir,* Nawwab Miyan Sayyid Muzaffar, the superintendent of buildings, Miyan Sayyid Yasin Sahib, and the superintendent *(darogha),* Miyan Sayyid Fath Muhammad.

8. INSCRIPTIONS OF THE SULTANS OF MALWA, DISTRICTS GUNA AND RAJGARH.—Two identical records from Bihar in Rajgarh District record the completion of the tomb of Shaikh Haji Shihab by Shaikh Sultan Shah, son of 'Umar, in A.H. 873 (A.D. 1468-69) during the reign of Mahmud Shah I. The text was composed by Qadi Budh, son of Jamal. An epigraph of Sultan Ghiyathu'd-Din from Mungaoli in Guna District, composed by Danyal, states that a garden and a step-well were constructed in A.H. 900 (A.D. 1495) by the minister of the king, Malik Ladan, entitled Shariqu'1-Mulk. This is the second inscription found so far in the District, mentioning both this high official and the composer, the other being from Fatehabad-Chanderi. A fresh, but unfortunately damaged, inscription of Sultan Nasiru'd-Din, found at Chanderi, records the construction of a step-well in A.H. 911 (A.D. 1505) and mentions a hitherto-unknown governor, Malikush-Sharq Ikhtiyaru'1-Mulk.

9. INSCRIPTIONS OF THE SURS, DISTRICT GWALIOR.—Two fresh inscriptions, one of Islam Shah and the other of Muhammad 'Adil Shah, were found at Gwalior. The first records the construction of a well by the king's orders in A.H. 956 (A.D. 1549-50), probably under the supervision of Daulat Khan. The other is badly damaged.

10. MISCELLANEOUS INSCRIPTIONS, DISTRICTS RAJGARH AND SHIVPURI.—An epitaph from Zirapur in Rajgarh District, dated A.H. 891 (A.D. 1486), records that the tomb is that of Malik Sarbaz Rustam Khani. The deceased appears to have been attached to Rustam Khan who was for some time the governor of Sarangpur. A trilingual epitaph from Narwar, written in Armenian, Hindi and Persian, gives some details about an Armenian Christian national of Iran. It states that Tir Arakel, son of Pughus of Julfa (in Iran), the *padri* (i.e., priest) of the Armenian Christians who had his parish at the Church of Shawali, happened to come to Narwar in A.H. 1153 (A.D. 1740-41) and stayed there until his death, which occurred ten years later at the age of seventy-two. It further states that for six months his body was kept in the grave, now marked by the epitaph under notice and was later on removed by his sons to the port of Hooghly, presumably for onward transmission to his native place.

MAHARASHTRA

11. MISCELLANEOUS INSCRIPTIONS, DISTRICTS AURANGABAD, BIR, SATARA AND SHOLAPUR.—An epigraph from the Fath-Burj at Dharur states that the bastion, designated Burj-i- Ali in the text, was completed in A.H. 977 (A.D. 1569-70) through the efforts of Kishwar Khan Ghazi, by 'Ali. Another inscription from the same place, referring to the construction of a bastion in the name of the Twelve Imams in Shuhur year 979 (A.D. 1579), mentions Turk Khan as the governor. A third record, again from Dharur, records the construction of the tomb of Qal'adar Khan, an official, in A.H. 1099 (A.D. 1687-88). A reference to the *Qadamgah* of Hadrat 'Ali is contained in an undated record, assignable to the sixteenth century, from Karad in Satara District. At Sholapur was found a record on the grave of the 'Adil Shahi governor Babaji Dabit Khan, which, though comprising one couplet, provides a specimen of the late sixteenth century Urdu. Two inscriptions from a mosque at Aurangabad credit the celebrated Sha'ista Khan with its construction in A.H. 1072 (A.D. 1661-62) and state that its two reservoirs supplied water to the city. Their text was both composed and inscribed by Mirza Muhammad, son of Muhammad Sharif, with the poetical name Yumni. The same Yumni had constructed a mosque near by, a year earlier as mentioned in its inscription, also composed by him. He appears to have been a poet of merit and calligraphist of great skill. A new inscription of another well-known official, Sadr Shah, who was for some time governor of Bir under Ghaziu'd-Din Firuz Jang, and a number of whose inscriptions is found in different parts of the country, was found at Bir, his fifth at that place. Composed, as some of his other inscriptions, by his son Muhammad Shah, it records the erection of a mosque in A.H. 1116 (A.D. 1704-05).

12. NIZAM SHAHI INSCRIPTIONS, DISTRICT BIR.—An epigraph, dated A.H. 981 (A.D. 1573-74), from Dharur, assigns the construction of a mosque to Sanjar Khan in the reign of Murtada I (cf. *1964-65*, p. 68, item 18). Another record from the same place, a bilingual one, also of the time of Murtada I, refers to the appointment of Ahmad Aqa as the custodian of the fort and construction, by him in A.H. 985 (A.D. 1577), of a bastion named after the king. A bilingual inscription of Burhan Nizam Shah was found at Bir. It was set up in Shuhur San 1007 (A.D. 1606-07) as a milestone indicating the road to Ahmadnagar (spelt Ahmadanagar).

13. INSCRIPTION OF THE MUGHALS, DISTRICT BIR.—According to one more inscription of Shah Alam I from Bir, Dayanat Ram, son of Khem Chand, a Khatri resident of Khushab in Punjab who had settled down at Bir, constructed a well for the use of travellers.

14. KHALJI INSCRIPTION, DISTRICT BULDANA.—One more record of Qutbu'd-Din Mubarak Shah was found at Rajur. Like the first one it is fragmentary: it refers to the construction of some structure by one of his officials.

15. 'ADIL SHAHI INSCRIPTION, DISTRICT SHOLAPUR.—An inscription from Sholapur, set up in the time of Sultan Muhammad 'Adil Shah, mentions the local official Yusuf Khan *havaldar.*

MYSORE

16. MISCELLANEOUS INSCRIPTIONS, DISTRICTS BELGAUM, DHARWAR AND RAICHUR.—Four slabs found at different places in Belgaum bear identical text purporting to demarcate the boundary of the cultivable land endowed by As'ad Khan for the Safa mosque, which was built by him in A.D. 1519. Three more inscriptions, occurring on the Safa mosque at Belgaum, testify to the calligraphical skill of their scribe, Abu Talib, son of Qasim al-Husaini, who appears to have received the title *Zarrin-Qalam* from the 'Adil Shahi court. An epigraph from Bankapur records the name of Najifi Khan, evidently a local official, after whom a bastion built in A.H. 999 (A.D. 1590-91) was named. An epigraph from Hangal, composed and written by Abu'I-Qasim Lari assigns the construction of an edifice to Rafi'u'd-Din in A.H. 1009 (A.D. 1600-01), during the governorship of Khurshid Khan, (also item 18 below). An epitaph from Bankapur records the name of the *havaldar* of the place, Muhammad Husain, who died in A.H. 1057 (A.D. 1647-48). Two inscriptions from Lakshmeshwar, also in Dharwar District, having identical text, mention Khan-i-'Azam Khund Mir entitled Ankus Khan, son of Manjhan entitled Ankus Khan, a well-known seventeenth century 'Adil Shahi nobleman, who lies buried at Khuldabad in Maharashtra. An undated record from Hittinala in Raichur District, assignable to fifteenth-sixteenth centuries, only contains the phrase 'two hundred and eighty-six *krohs'*, which may refer to some distance.

17. TUGHLUQ, INSCRIPTION, DISTRICT BIDAR.—A fresh epigraph of Muhammad bin Tughluq Shah, found at Kalyani, records the construction of a mosque in A.H. 726 (A.D. 1326) by Ahmad, son of 'Ali Jachneri, when the *iqta'* was held by Maliku'sh-Sharq Qiwamu'd-Daulat wa'd-Din, the *vazir* of the province of Deogir.

18. 'ADIL SHAHI INSCRIPTIONS, DISTRICT DHARWAR.—An inscription of the time of Ibrahim 'Adil Shah I, from Bankapur, records the name of an official, Khan Malik, who built a mosque in A.H. 945 (A.D. 1538-39); it was composed by Amin. Two more inscriptions from the same place refer to Khurshid Khan, the deputy of the king (item 16 above) having constructed a bastion and a mosque in A.H. 1006 (A.D. 1597-98) and A.H. 1011 (A.D. 1602) respectively, in the time of Ibrahim II. The later inscription was executed by Abu'I-Qasim, son of Shaikh Nizam Lari (item 16 above). Another inscription of the same king was found on a mosque at Hangal.

RAJASTHAN

19. INSCRIPTION OF THE SAYYIDS, DISTRICT ALWAR.—A unique record of Muhammad Shah, son of Farid Shah, from Bahroj (pl. XLVIII B), records the construction of a step-well in A.H. 846 (A.D. 1442) during the governorship of Mubarak Khan, by Abu'l-Laith Nasr, son of Mughith al-Lahori, a servant of Hadrat Makhdum Shaikh Fadlu'llah Bukhari.

20. MISCELLANEOUS INSCRIPTIONS, DISTRICT ALWAR, KOTA AND NAGAUR.—Twoepitaphs from Nagaur record the death of Abu Bakar, son of Sa'du'llah, and Abu'l-Hasan *alias* Sa'id, son of Sa'id, who died respectively in A.H. 636 (A.D. 1238-39) and A.H. 646 (A.D 1248-49). A very interesting record (pl. XLIX A) refering to an illustrious member of the Khanzada ruling house was found at Nagaur. According to this, Hatim Khatun, widow of Shams Khan, the progenitor of the Khanzada line, constructed a well for the use of the Muslims in A.H. 838 (A.D. 1435). It is to be noted that the record omits the name of the ruling chief. Another bilingual inscription from Gagraun, in Kota District, referring itself to the governorship of Sultan Rathor, son of Rai Kalyan Mai of Bikaner, assigns the erection of the gate in A.H. 987 (A.D. 1580) and a noble edifice in A.H. 991 (A.D. 1583) to one Miyan Isa,- son of 'Adawal Khan. A few more visitors' records of the well-known nobleman, historian and *litterateur* of Akbar's time, Amir Muhammad Ma'sum Nami, and his son Mir Buzurg were found at Nagaur. Both the father and the son visited the tomb of Pir Zuhuru'd-Din in A.H. 1008 (A.D. 1599-1600), apparently when the latter was on his way to Iran as Akbar's envoy. Those on the Akbari-Masjid contain couplets composed and written by both the father and the son, on their return, five years later. A bilingual inscription on a tank at Ajabgarh, in Alwar District, contains an order, dated A.H. 1038, Vikrama-*samvat* 1642, prohibiting angling in the tank which was constructed by Diwan Madho Singhji in the reign of Akbar. The dates are irregular. An inscription from Gagraun records the construction of a mosque in A.H. 1106 (A.D. 1649-50) by Nawwab Iradat Khan, a grandson of Nawwab A'zam Khan, and arrangements made for the maintenance of the mosque. Another record registers the grant, by the same Nawwab, of the revenues of a village Chaukiya for the annual *'urs* of the Dargah of Mithe Shah.

21. GHORI INSCRIPTIONS, DISTRICTS BHARATPUR AND NAGAUR.—A very important, but unfortunately badly-damaged, record from Kaman in Bharatpur District, which had been noticed by A. Cunningham, who assigned it to Iltutmish, appears, on examination, to be dated A.H. 600 (A.D. 1204). The letters of the text containing the name of the reigning king, who appears to be none other than Muhammad bin Sam, and the object of the construction are peeled off; the name of the governor, Tughril Sultani, by whom evidently Bahau'd-Din Tughril is meant, is quite legible. It seems to record the construction of a well, a tank and a mosque. The name of the builder, also a great Amir, is lost. Another inscription of Muhammad bin Sam, was found at Nagaur (pl. XLIX B). Chronologically, the earliest to be found so far in the State, it is also fragmentary and besides the date A.H. 594 (A.D. 1197-98), contains his name, *kunya* and part of his titles and the cognomen a'sh-Shihabi, evidently of a high official whose name is lost.

22. INSCRIPTION OF THE MUGHALS, DISTRICT KOTA.—A bilingual inscription of Aurangzeb from Shahabad in Kota District, refers to a royal order issued in the twenty-third regnal year (A.D. 1679), in consideration of the representation made personally by the *mahajans*, Brahmins and traders of the town, regarding the undesirable levy on landed property *(savir);* it was decreed that the levy was not proper and consequently, Randhula Khan, the *jagirdar*, stopped the said levy and also remitted half of the levies like *zakat, batai, khont, tola'i, kotwali,* etc., and total levies on birth and marriage.

23. KHALJI INSCRIPTIONS, DISTRICT NAGAUR.—A fresh record, also fragmentary, of' Alu'd-Din Khalji, dated A.H. 705 (A.D. 1305-06), was found at Nagaur. From the same

place was discovered a new epigraph of his son Qutbu'd-Din Mubarak Shah, recording the construction of a mosque in A.H. 720 (A.D. 1320).

24. INSCRIPTION OF THE TUGHLUQS, DISTRICT NAGAUR.—A fragmentary record of Ghiyathu'd-Din Tughluq Shah, its extant portion only containing his name and titles, was found at Nagaur.

25. INSCRIPTIONS OF THE KHANZADAS, DISTRICT NAGAUR.—About a dozen new and interesting records of the Khanzadas of Nagaur were discovered in their capital. But unfortunately, quite a few of them, particularly of the early chiefs, Firuz Khan and Mujahid Khan, are fragmentary. The earliest, dated A.H. 821 (A.D. 1418), refers to the martyrdom of some one of high rank and construction of his tomb. Another one, dated in the following year, mentions Khan-i-A'zam Firuz Khan, son of Shams Khan Ghazi, and refers to the construction of some edifice. Another fragmentary record assigns the construction of a mosque to Majlis-i-'Ali Mujahid Khan in A.H. 865 (A.D. 1461). Of the inscriptions of the reign of Muhammad Khan, the first, dated A.H. 909 (A.D. 1503-04), assigns the construction of a mosque to the senior wife of Khanzada Miyan 'Ali, the second records the construction of a mosque in A.H. 911 (A.D. 1505-06), the third mentions the erection of a mosque and tomb in the same year by Khanzada Malik Ahmad Khan, and the fourth refers to the construction of a mosque in A.H. 913 (A.D. 1507). An epigraph of Firuz Khan II records that a mosque and a tomb were built in A.H. 933 (A.D. 1527).

26. SUR INSCRIPTION, DISTRICT NAGAUR.—An epigraph of Islam Shah, also from Nagaur, records the construction of a mosque in the *khanqah* of Hadrat Shaikh Hamidu'd-Din Nagauri Suhrawardi (d. A.D. 1244), by Miyan Khwaja Batani in A.H. 959 (A.D. 1552), during the time of the saint's spiritual successor and a great divine of his time, Shah Sulaiman.

UTTAR PRADESH

27. LODI INSCRIPTION, DISTRICT AGRA.—An inscription of Ibrahim Lodi was found at Agra, which assigns the construction of a mosque in A.H. 927 (A.D. 1521) to Ruknu'd Din Mardan Shah of Zafarabad, a servant of Majlis-i-'Ali Zafar Khan *alias* Miyan Makan.

28. INSCRIPTION OF THE SURS, DISTRICT AGRA.—A partly-obliterated epigraph, also from Agra, seems to refer to the construction of a well by Husain, in the name of the saint ᶜAlau'l-Haq in A.H. 954 (A.D. 1537-38), during the reign of Islam Shah.

29. INSCRIPTIONS OF THE MUGHALS, DISTRICTS AGRA, ALLAHABAD, BARA BANKI AND RAE BARELI.—Two inscriptions from Kachpura, near Agra, composed and written by the celebrated enigmatist, Shihab-i-Mu'amma'i, record the completion of a mosque by the orders of Humayun and through the efforts of the well-known literary figure and historian, Zain Khwafi. The earliest inscription of Akbar known so far from Agra, records the construction of a mosque in A.H. 968 (A.D. 1560-61) by the *faujdar-i-khass,* Ikhtiyar Khan, son of Shihabu'd-Din. One Nawwab Amin Khan is mentioned in a damaged record of Akbar dated A.H. 987 (A.D. 1579-80), from Sarai-Akbarabad, in Bara Banki District, as the builder of a mosque. A fragmentary record of the same emperor from Makanpur, in Rae Bareli District, mentions Maliku'sh-Sharq, son of Jalal Quraishi, who had excavated

a well. An inscription from Allahabad assigns the completion, in A.H. 1015 (A.D. 1606-07), of the Khusraw Bagh gateway to the supervision of Aqa Rida, *musawwir* (literally, painter), a devoted official of Jahangir. Two damaged records of Jahangir from Fatehpur Sikri record the construction of a mosque in A.H. 1019 (A.D. 1610-11), by Bahau'd-Din, who is introduced in the text as *chunapaz* (manufacturer of mortar) on the royal establishment. In a record of the time of Aurangzeb from Agra, dated A.H. 1104 (A.D. 1693), a personage of high rank, Mir Rafi'u'z-Zaman, is mentioned as the builder of a mosque.

An epitaph from Agra, set up and inscribed by Mughal Aghar Khan in A.H. 1119 (A.D. 1707-08), gives details of the circumstances under which the martyrdom of his father Nawwab Mirza 'Ashur Baig, also entitled Aghar Khan, took place in A.H. 1102 (A.D. 1690-91) in a skirmish against the infidels, who had captured and looted a group of Sayyids going on pilgrimage, near the Sarai Jajhau (Jajau, of maps). An inscription of Shah 'Alam I, also from Agra, records the construction of a mosque and the endowment of ten shops for its maintenance, in the fourth regnal year (A.D. 1710-11).

30. MISCELLANEOUS INSCRIPTIONS, DISTRICTS AGRA, JAUNPUR AND RAE BARELI.—An early inscription from Fatehpur Sikri forms the epitaph of Zahiru'd-Daulat wa'd-Din, presumably an official, who expired in A.H. 719 (A.D. 1319). An epitaph, inscribed by Mir 'AH, from Jaunpur, records the death of Muhammad Qazaq which occurred at a young age in A.H. 984 (A.D. 1576-77). It also contains a *ghazal* composed by Ghazali. An inscription, composed by Firaqi, from Dalmau, records the construction of a mosque in A.H. 1016 (A.D. 1607-08) by Haji Zahid. An epigraph from Agra, composed and written by Wali, son of Adam, the chronogrammatist *(muarrikh),* assigns the construction of a mosque in A.H. 1025 (A.D. 1616) to Khwaja, Kafur and also mentions I'tibar Khan, an official of high rank. In his epitaph, also from Agra, one Muhammad, the *mujahid,* is stated to have been killed in a battle against the non-Muslims in A.H. 1071 (A.D. 1660-61). No details of the battle are given.

31. EARLY INSCRIPTIONS, DISTRICT BULANDSHAHR.—About a score of fragmentary inscribed slabs, embedded into the wall of the 'Idgah at Bulandshahr, were found to refer to the reign of a king, who appears, from the few titles that have survived and on palaeographical ground, to be either Muhammad bin Sam or one of his two successors in India.

32. INSCRIPTIONS OF THE TUGHLUQS, DISTRICTS JAUNPUR AND RAE BARELI.—A record from Dalmau in Rae Bareli District assigns the construction of a *namazgah* (i.e. *'idgah)* to Maliku'sh-Sharq Taju'd-Din in A.H. 759 (A.D. 1357-58), during the reign of Firuz Shah. The well-known Jaunpur inscription of the same monarch, from the mosque inside the fort, has been found, on examination, to contain A.H. 761 (A.D. 1360) as the date of its construction by Firuz Tughluq's brother Ibrahim, who was the deputy Head Chamberlain. The date was wrongly read by previous scholars including A. Cunningham and H. Blochmann as A.H. 778 (A.D. 1377).

III. NUMISMATICS AND TREASURE-TROVE [1]

ANDHRA PRADESH

1. MUGHAL COINS, YANAMGANDLA, DISTRICT MAHBUBNAGAR.—Nineteen silver coins belonging to the period of Aurangzeb and later Mughal emperors were found.

BIHAR

2. PUNCH-MARKED COINS AND OTHER OBJECTS, DISTRICT RANCHI.—Five punch-marked coins of silver were collected from the bed of the river Koel. At Kumharia near Lohardaga, an earthen jar containing a few gold ornaments was discovered.

KERALA

3. COINS OF TIPU AND VIRARAYA, KALNAD, DISTRICT CANNANORE.—A hoard consisting of gold and silver coins of Tipu issued from the Calicut mint, *fanams* of Viraraya and fragments of gold and silver ornaments were recovered during the renovation of the Sastha temple.

MADHYA PRADESH

4. EARLY SAKA COINS, UJJAIN.—A coin of a certain ruler Mahu and two coins bearing the name of Dasa, both in copper, were discovered and identified. Possibly, these two kings belonged to the pre-Bhumaka house of the Sakas of Malwa.

MAHARASHTRA

5. MUGHAL AND INDO-BRITISH COINS, DARYAPURA, DISTRICT AMRAVATI.—A hoard comprising one hundred and seventy-seven silver coins of emperors Aurangzeb, Shah 'Alam Bahadur (Shah 'Alam I), Jahandar Shah, Farrukhsiyar, Muhammad Shah and queen Victoria was reported. The Mughal issues bear the names of different mint-towns of the empire.

6. COINS OF AHMAD SHAH, BHANDARA.—Two hundred coins of the Mughal emperor 'Ahmad Shah were discovered in a hoard which included thirty-one issues of the French Compagnie des Indes struck in his name.

7. BAHMANI COINS, SUGAON, DISTRICT BIR.—Eighty copper coins of the Bahmani ruler Kalimu'llah Shah were obtained as treasure-trove.

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1 Information from: 1, the Superintendent, South-eastern Circle; 2, the Superintendent, Mid-eastern Circle; and 15, the Superintendent, Western Circle, of the Survey; 3, the Director of Archaeology, Kerala State; 4 and 19-21, Professor K.D. Bajpai, University of Saugar; 5-12, the Director of Archives and Historical Monuments, Maharashtra State; 13, the Director of Cultural Affairs, Government of Orissa; and 14 and 16-18, the Director of Archaeology and Museums, Rajasthan State.

8. MISCELLANEOUS COINS, CHANDGARH, DISTRICT KOLHAPUR.—A treasure-trove consisting of four silver coins of the East India Company and forty-two silver issues of the native state of Kolhapur was reported. Nine of the Kolhapur rupees also bear the name of the Mughal emperor Shah 'Alam II.

9. MUGHAL GOLD COINS, KHAPRI, DISTRICT NAGPUR.—Two gold *muhrs,* one belonging to Shah Jahan, minted in his thirty-second regnal year, and the other of Farrukhsiyar dated in the seventh regnal year, came to light.

10. ASAF JAHI AND INDO-BRITISH COINS, MAHAL HIPPARGA, DISTRICT OSMANABAD.—Silver rupee coins of Nizamu'l Mulk Asaf Jah Bahadur, George V and Edward VII were found in a hoard of fifteen coins.

11. MUGHAL AND KOLHAPUR COINS, KARAD, DISTRICT SATARA.—Two silver issues of Muhammad Shah and forty-four rupees of the erstwhile State of Kolhapur, struck in the name of Shah 'Alam II were discovered.

12. MUGHAL SILVER COINS, TALUK KELAPUR, DISTRICT YEOTMAL.—Of the hoard of one hundred and ninety-nine Mughal rupees from village Chah, only one hundred and thirty-nine could be identified as belonging to Akbar, Aurangzeb, Farrukhsiyar, Muhammad Shah, 'Ahmad Shah, 'Alamgir II and Shah 'Alam. Another hoard, containing one hundred and fourteen issues belonging to Akbar, Shah Jahan, Aurangzeb, 'Azam Shah, Shah 'Alam Bahadur, Jahandar Shah, Farrukhsiyar, Rafiu'd-Darjat and Muhammad Shah, was found at village Rajurwadi.

ORISSA

13. INDO-MUSLIM AND INDO-BRITISH COINS, BANDALA, DISTRICT CUTTACK.—A treasure-trove of forty-six silver coins of the Muslim and British rulers of India was acquired.

RAJASTHAN

14. PUNCH-MARKED COINS, BAIRAT, DISTRICT JAIPUR.—Silver punch-marked coins numbering fifty-six were obtained from Ismilpur-ki-Doongri near Bairat.

15. GADHAIYA COINS, MANDORE, DISTRICT JODHPUR.—A hoard of four hundred and ninety-two Gadhaiya coins was discovered during the course of debris clearance near the Jaina temple in Mandore fort.

16. COINS OF THE MUGHALS AND MEDIEVAL HINDU STATES, DISTRICT KOTAH.—Seven coins of the Mughal period in silver and two of copper, one each of the Maratha states of Gwalior and Indore, were found at village Anwa in Tahsil Sangod. From another village Cheepa Baroda, within the same District, a hoard of one hundred and seventy-seven silver coins of the Mughals and Hindu principalities of Rajasthan was obtained.

17. RAJPUR COINS, KHERODA, DISTRICT UDAIPUR.—A hoard comprising four hundred and ninety-two silver coins of the Mewar rulers of the ninth and tenth centuries A.D. was acquired by the Victoria Hall Museum, Udaipur.

18. GADHAIYA COINS, SAIRA, DISTRICT UDAIPUR.—During the digging operations at Saira-Ranakpur road, seventy-eight Gadhaiya coins were found.

UTTAR PRADESH

19. KAUSAMBI COINS, KAUSAMBI, DISTRICT ALLAHABAD.—Three coins of Angaraja and a seal and copper coins of king Hastipala were identified.

20. PANCHALA COINS, AHICHCHHATRA, DISTRICT BAREILLY.—Two copper issues of Damagupta, three of Vishnumitra and two of Vijayamitra were found.

21. MATHURA MITRA COIN, MATHURA.—A copper coin of a king named Satyamitra was identified.

IV. OTHER IMPORTANT DISCOVERIES

ANDHRA PRADESH

1. SCULPTURE OF KUMARASVAMI, KOUNDINYASHRAM, DISTRICT KURNOOL.—A beautiful six-headed stone sculpture of Shanmukha riding on a peacock and belonging to the early medieval period, was discovered in the Siva temple by Shri B. Raja Rao.

2. ANCIENT SITE, CHANDAVARAM, DISTRICT NELLORE.—On receipt of a report from the local Panchayat about the existence of antiquarian remains, Shri B. Raja Rao explored the area and found an ancient site and a temple of Mahabalesvara. Surface-finds included a few sherds of the megalithic Black-and-red Ware and the ubiquitous red and all-black wares. Besides, remains of *stupas,* earthen bunds and fortifications were also noticed.

BIHAR

3. STUCCO SCULPTURES, APHSAD, DISTRICT GAYA.—Shri V. Mishra noticed eight unique stucco sculptures on the recently-exposed high plinth of the brick-temple (pl. L) at Aphsad which had earlier yielded Adityasena's inscription. The stucco figures are located in the niches and depict different scenes.

4. MICROLITHS, DISTRICT RANCHI.—Shri B. K. Sharan found microliths at Birta, Damari and Nichitpur.

5. MEGALITHS, DISTRICT RANCHI.—Shri B. K. Sharan found a few megalithic monuments at Maranghada and Maranghatu.

6. MEDIEVAL TEMPLE, DEORI, DISTRICT RANCHI.—Shri B. K. Sharan found ruins of a stone temple at Deori.

7. ANCIENT SITE, BAISI (VAYASIGARHI), DISTRICT SAHARSA.—Shri V. Mishra found an ancient brick wall of six to seven courses, sealed by a thick alluvial deposit at Baisi (Vayasigarhi), Police Station Pratapganj. Besides, terracotta ring-wells, storage-jars and terracotta ear-lobes, all characteristic of the Sunga period and a metal bird, probably a peacock, were also collected from the site.

8. N. B. P. WARE SITE, MAHARAJGANJ, DISTRICT SARAN.—Shri B. N. Prasad discovered a mound yielding remains of ancient brick structures and N. B. P. Ware about 10 km. north-east of Maharajganj.

9. EARLY HISTORICAL SITE, NAGDIHA, DISTRICT SARAN.—Shri B. N. Prasad found a mound surrounded by a deep ditch full of water at Nagdiha.

10. SCULPTURE OF SIVA-PARVATI, MANRAR-KALAN, DISTRICT SARAN.—Shri B. N. Prasad noticed a polished black stone image of Siva-Parvati at Manrar-Kalan.

11. SCULPTURE OF GANGA, MADAR-KHURD, DISTRICT SARAN.—Shri B. N. Prasad examined a brown stone image of Ganga at Madar-Khurd.

GOA, DAMAN AND DIU

12. EARLY AND MIDDLE STONE AGE AND NEOLITHIC SITES, DADRA AND NAGAR-HAVELI.—Shri D. B. Chitale discovered Early and Middle Stone Age and neolithic sites on the Daman-Ganga at Athola, Kanchigam, Kherdi and Kudacha and collected typical tools like handaxes, cleavers including miniature specimens, large flakes, macehcad, etc. (pl. LI A).

GUJARAT

13. MIDDLE STONE AGE SITE, PADAM TEKRI, DISTRICT BULSAR.—Sri J. P. Joshi dis covered a Middle Stone Age site at Padam Tekri on the river Ambika in Taluk Una, and collected tools (pl. LI B) typical of this assemblage, viz., scrapers, points and cores in red jaspar.

14. EARLY STONE AGE SITE, PINDARA, DISTRICT JAMNAGAR.—Shri J. P. Joshi located an Early Stone Age site at Pindara in Taluk Kalyanpur and collected tools consisting of choppers, large flakes and cleavers, including the highly-developed forms.

KERALA

15. ROCK-CUT CAVE, KALADY, DISTRICT PALGHAT.—During quarrying operations for brick-making, a rock-cut cave with a central pillar and a side opening was discovered in Kalady in Taluk Ponnani. Besides the megalithic Black-and-red Ware, iron implements were also found from the cave.

MADHYA PRADESH

16. EARLY STONE AGE TOOLS, BHOPAL.—Shri M. D. Khare collected some cleavers and handaxes belonging to the Early Stone Age at the top of Shyamala hill in Bhopal.

17. EARLY AND LATE STONE AGE TOOLS NEAR BHOPAL.—Shri M. D. Khare collected more than half-a-dozen Early Stone Age and a few Late Stone Age tools from the bed of the rivulet Gau-Kho, 37 km. west of Bhopal.

18. N. B. P. WARE SITE, KAKRAHTA, DISTRICT JABALPUR.—Shri K. M. Srivastava discovered sherds of the painted N. B. P. Ware at the already-reported site of Kakrahta (*1960-61,* p. 60).

19. MEDIEVAL SCULPTURES, DISTRICT JABALPUR.—Shri C. B. Trivedi found images and architectural fragments of Kalachuri style (*1960-61,* p. 60; *1962-63,* p. 68) in the vicinity of the inscribed collosal image of Santinatha at Bahuriband.

20. MEDIEVAL SCULPTURES, DISTRICT JABALPUR.—Professor K. D. Bajpai discovered near Tewar (ancient Tripuri) a number of interesting stone sculptures, assignable to the eleventh-twelfth century A.D. Noteworthy amongst these were: (i) Siva-Parvati with *ganas;* (ii) four-handed standing Vishnu having an elaborate halo and *ayudhas;* (iii) an inscribed

stele (pl. LII A), in the central panel of which is the figure of a four-handed goddess *nagi,* seated in *padmasana,* the other two panels showing multi-handed goddesses holding various objects. On the pedestal, below an ornamental creeper, is an inscription in the early Nagari characters of the eleventh century A.D. reading *sri-Viranandi acharyena pratimeyam karapita,* meaning that this image was caused to the made by Acharya Viranandi; and (iv) *sura-sundari* with an elaborate head-gear and heavy ornaments.

21. EARLY STONE AGE TOOLS, DISTRICT MANDASOR.—Shri C. B. Trivedi discovered Early Stone Age tools, consisting of handaxes and cleavers, all in quartzite, at Khola-More (*1957-58,* p. 26) and Rampura. At Rampura he also noticed an implementiferous cemented gravel.

22. MEDIEVAL SCULPTURES, DISTRICT MANDASOR.—Shri C. B. Trivedi found sculptures and architectural pieces belonging to the eleventh-twelfth century at Hinglajgarh *{1957- 58,* p. 28), Kalakot, Kethuli and Sandhara. Notable among these are *sapta-matrikas,* Surya, Indra and *apsarases* from Hingalajgarh, Indra from Kalakot, and Gaja-Lakshmi and Garuda from Sandhara. He also noticed an *ashta-mukha* linga at Mandasor in the bed of the river Shivana.

23. LATE MEDIEVAL STRUCTURES, RAMPURA, DISTRICT MANDASOR.—Shri C. B. Trivedi found at Rampura temples of *pancharatha* and *saptaratha* types belonging to *circa* eighteenth century. Their plan, consisting of *garbha-griha, antarala, mandapa* and *ardha-mandapa,* follows the pattern of the temples within the Chitorgarh fort.

24. EARLY MEDIEVAL SCULPTURES, SUVASRA, DISTRICT MANDASOR.—Professor K. D. Bajpai discovered several Brahmanical and Buddhist stone sculptures, assignable to the tenth-eleventh century, at Suvasra. Noteworthy among these are the images of Marichi, Lakshmi, Siva, Bhairava and Vishnu. Several profusely carved door-sills and lintels were also found. These pieces are reported to have been removed from the ancient temple at Ghosai, over 9 km. from Suvasra.

25. BRAHMANICAL SCULPTURES, JIRAN, DISTRICT MANDASOR.—Professor K. D. Bajpai discovered several interesting stone sculptures, including four-handed Vishnu, Lakshmi-Narayana, standing Narasimha with various *ayudhas,* four-faced Siva, *apsarases* and several capitals of pillars showing *kichakas.* On one of the capitals, a male figure is seen embracing a female and, strangely enough, thrusting a dagger into the latter's bosom. On a stone stele are depicted incarnations of Vishnu and some episodes from Krishna's life, such as *dadhi-manthana, sakata-vadha* and *yamalarjuna.* The sculptures are assignable to *circa* tenth-eleventh centuries A.D.

26. PAINTED ROCK-SHELTERS, DISTRICT RAISEN.—Shri Ayodhya Prasad discovered painted rock-shelters at Bhim-Baithaka near Obaidullaganj and Patal-Khoh near Berkheri. In the former shelter he observed a Brahmi inscription of *circa* second century B.C., mentioning the name of the cave as *'Sihakasa lena'.* The paintings are executed in red and white colours and generally depict warriors and animals.

27. EARLY MEDIEVAL SCULPTURES, DISTRICT VIDISHA.—Shri C. B. Trivedi discovered a statue of Hari-Hara at a mound near the Heliodoros pillar.

MAHARASHTRA

28. MICROLITHIC SITE, DISTRICT POONA.—Shri S. A. Sali found microliths at Kharoshi and Vade. The tools were made variously of chalcedony, jasper and crystal.

MYSORE

29. EARLY STONE AGE TOOLS, DISTRICT BELGAUM.—Shri S. A. Sali collected Early Stone Age tools near Sutkatti.

30. MEDIEVAL SCULPTURES INCLUDING HERO-STONES, DISTRICT DHARWAR.—The Kannada Research Institute, Dharwar, reported the discovery of a hero-stone from Tambur in Kalghatgi Taluk containing sculptural representation of the famous Kalachuri usurper Bijjala as fighting from the back of an elephant. The inscription describing the event furnishes the earliest date for this chief, viz., *circa* A.D. 1136. An exquisitely-carved *ashtamatrika* panel (pl. LII B) was obtained from the same place. Besides the usual seven mothers, the panel contains the eighth deity, Durga, with the lion as her vehicle.

PUNJAB

31. MEDIEVAL SCULPTURES, DISTRICT AMBALA.—Shri Devendra Handa discovered: at Ad Badri, about 30 km. east north-east of Jagadhari, sculptures of Brahma, Sarasvati, Siva, *nandi*, Hanuman, etc.; at Kharar, a Tahsil town, sculptures of Vishnu, lying in a Siva temple by the side of the tank; Brahma and Jaina *tirthankaras* at Pinjore, about 20 km. east of Chandigarh; and a large number of Brahmanical and Jaina sculptures (Ganesa, Vishnu, Parvati, Chamunda, Mahavira, Parsvanatha, etc.) fixed to a modern building near a *baoli*.

32. BODHISATTVA HEAD, MUSTAFABAD, DISTRICT AMBALA.—The Education Depart ment of the Government of Punjab reported the discovery of a Bodhisattva head of Gandhara style at Mustafabad.

33. OCHRE-COLOURED WARE SITE, DISTRICT AMBALA.—Shri H. K. Narain noticed the Ochre-coloured Ware at Sandhai, about 8 km. north of Bilaspur, on the left bank of the dry bed of the river Saraswati. Some of the typical Harappan forms like the dish-on-stand, knobbed lids and storage-jars were also found.

34. LATE HARAPPAN POTTERY, DISTRICT LUDHIANA.—The Education Department of the Government of Punjab reported the discovery of Late Harappan pottery at Mathan near Sanghol.

35. MEDIEVAL SCULPTURES, DISTRICT ROHTAK.—The Education Department of the Government of Punjab reported the discovery of about forty sculptures at Khanpur near Mohan-Bari.

RAJASTHAN

36. LATE STONE AGE SITE, DISTRICT AJMER.—The Director, Department of Archaeology and Museums, Government of Rajasthan, discovered a Late Stone Age site

at Kanhathai, near Nanda, already known for its four-faced Kushan *linga* in spotted red sandstone. Besides microliths, a few cores and flakes were also collected.

37. PAINTED ROCK-SHELTER, DISTRICT BHARATPUR.—The Director, Department of Archaeology and Museums, Rajasthan, discovered a painted rock-shelter at Darr near Bandha-Baratha.

38. MEDIEVAL SCULPTURES, DISTRICT BHARATPUR.—The Director, Department of Archaeology and Museums, Rajasthan, discovered a Ganesa image in red sandstone, belonging to the tenth century, at Chhelasnagla, a village near Bayana.

39. MEDIEVAL SCULPTURE, DISTRICT KOTA.—The Director, Department of Archaeology and Museums, Rajasthan, found a red stone image of Siva-Parvati of about ninth-tenth century from Kota.

40. LATE STONE AGE TOOLS, DISTRICT NAGAUR.—Shri N. M. Ganam discovered Late Stone Age sites at Akora, Bari-Khatu and Kuroli. The assemblage consists mostly of parallel-sided blades and fluted cores.

41. EARLY MEDIEVAL TEMPLE, MARWAR-BALIA, DISTRICT NAGAUR.—Shri N. M. Ganam located an early medieval temple (pl. LIII) with a complete *sikhara*, dedicated to Mahishasuramardini.

42. MEMORIAL-STONE, GOTH, DISTRICT NAGAUR.—Shri N. M. Ganam located at Goth a memorial-stone carved with an image at each of its cardinal directions and belonging to the reign of Somesvara of the Chahamana dynasty.

43. POST-GUPTA AND EARLY MEDIEVAL SCULPTURES, DISTRICT UDAIPUR.—Shri S. Ananda Sastry located post-Gupta sculptures, in schist, of *matrikas*, Parvati and Vishnu near Kalyanpur. At Jasawara, early medieval sculptures of Vishnu with avatara-panels and six-armed Mahishasuramardini were also noticed by him.

44. STONE PRASASTIS, KUMBHALGARH, DISTRICT UDAIPUR.—Shri D. I. Kishnani and Shri Ananda Sastry discovered fragments *of prasastis* of Rana Kumbha's reign during the debris-clearance of Mama-devi temple at Kumbhalgarh.

TRIPURA

45. BUDDHIST REMAINS AT SOUTH JOLAIBARI AND PILAK, TRIPURA.—Led by Shri S. Banerji of the Directorate of Education, Tripura State, Sarvashri A. Ghosh and R. G. Kar noticed two defaced standing Buddha statues in the compound of the local school and two more mutilated standing statues, probably of Avalokitesvara, on a mound, evidently a ruined *stupa*, in village South Jolaibari in Belonia Sub-division. All of them belonged to the early medieval period. Traces of underground brick walls were noticeable at many places. A small standing Lokesvara figure in bronze found in the school-compound was recovered from a local person, chemically cleaned in the laboratory of the Archaeological Chemist and made over to the Director of Education. Other sculptures were reported to exist in the adjacent village of Pilak.

UTTAR PRADESH

46. EARLY HISTORICAL SITE, KAURIAGANJ, DISTRICT ALIGARH.—Shri B. K. Sinha discovered an early historical site at Kauriaganj, situated on the right bank of the river Kali. The ancient mound, with an average height of about 3 m., covers an area of 50 x 100 m. A major part of it is under cultivation. Surface-collections included sherds of the Painted Grey, plain grey, black-slipped, black-and-rcd and plain red wares. In the last-mentioned category, some Sunga-Kushan shapes were encountered.

From a cultivated field, about 450 m. east of the mound, some sherds of the Ochrc-coloured pottery were also picked up. About 90 m. further south-cast of this site, a spread of Muslim pottery was noticed.

47. PAINTED GREY AND N. B. P. WARES, DISTRICT FATEHPUR.—Shri L. M. Wahal reported the occurrence of the Painted Grey and N. B. P. Wares near the village of Galatha, at the confluence of the rivers Ganga and Pandoo.

48. PAINTED GREY WARE SITE, SHAHABAD, DISTRICT HARDOI.—Dr. Jagadish Gupta of the University of Allahabad reported the occurrence of the N. B. P. Ware and Kushan terracottas at Shahabad. During a subsequent visit, Dr. Y. D. Sharma also discovered sherds of the Painted Grey Ware along the Garra rivulet.

49. EARLY HISTORICAL SITE, HARDOI.—DR. Y. D. Sharma examined an extensive mound to the south-west of the town of Hardoi, through which the Hardoi-Sandi road cuts through, and found pottery of the Kushan period. The lowest habitation which lies below the road-level, is considered to be still earlier.

50. ANCIENT SITE, KATWAR, DISTRICT JAUNPUR.—Shri P. K. Sharan noticed a mound with remains of brick structures and red ware at Katwar. An inscribed copper coin of the Kushan dynasty was also collected from here.

51. HISTORICAL SITE, BARERI, DISTRICT JAUNPUR.—Shri P. K. Sharan noticed a mound with black-and-red ware along with brick structures at Bareri. Besides, square stone slab inscribed in Arabic characters and four square copper weights (?) were also collected.

52. MEDIEVAL BRICK TEMPLE, HARDWARI, DISTRICT JAUNPUR.—-Shri P. K. Sharan found a brick temple with an image of Nandi at Hardwari.

53. MEDIEVAL SCULPTURES, DISTRICT JAUNPUR.—Shri P. K. Sharan found: at Mahmudpur, a stone image of Vishnu belonging to late medieval period and fragments of a door-frame depicting *mithuna* figures; at Mahiahu, an image of Siva-Parvati of sandstone belonging to the sixth century A.D.; and at Gagaura, an image of Vishnu and Lakshmi of sandstone belonging to the fifth-sixth century.

WEST BENGAL

54. BLACK-AND-RED WARE, PANTANDA, DISTRICT BIRBHUM.—Shri V. Sen noticed black-and-red pottery at this site.

55. LATE STONE AGE AND CHALCOLITHIC SITE, KENDLO, DISTRICT BIRBHUM.—Shri V. Sen noticed black-and-red ware associated with tools of the Late Stone Age and copper implements at this site.

56. LATE STONE AGE SITE, HETAMPUR, DISTRICT BIRBHUM.—Tools of the Late Stone Age including scrapers were noticed by Shri V. Sen at this site.

57. LATE STONE AGE AND MEDIEVAL SITE, KRISHNANAGAR, DISTRICT BIRBHUM.—Shri V. Sen noticed remains of a medieval fortification at this site. Besides, he also found tools of the Late Stone Age.

58. LATE STONE AGE SITE, POCHHERA, DISTRICT BIRBHUM.—Shri V. Sen found tools of the Late Stone Age, black-and-red pottery, agate beads and fragments of crude glass bangles at this site.

V. RADIOCARBON DATES 1.

DATE-LIST[2]

The following radiocarbon dates were measured by the Tata Institute of Fundamental Research, Bombay, during August 1965-August 1966. The sites have been arranged State-wise. The dates are based on the radiocarbon half-life value of 5730 years. For B.C./A.D. scale, 1950 has been taken as the reference year.

ANDHRA PRADESH

1. DHARANIKOTA, DISTRICT GUNTUR

(i) TF-246. Early Period. 2425 ± 100 (475 B.C.)
Charcoal from Trench DKT-1; locus XXXVI-XLII; layer 11, depth 6.5 m. below surface,

(ii) TF-248. Fortifications. 2155 ± 100 (205 B.C.)
Charcoal from Trench DKT-1; locus XXXVI-XXXIX; layer 10; depth 6 m. below surface; field No. DKT-1/63/No. III.
Comment: Sample will date Satavahana fortifications,

(iii) TF-247. Early Period. 2340 ± 100 (390 B.C.)
Charcoal from Trench-2; locus A2-A3; layer 8; depth 3.7 m. below surface; field No. DKT-2/63/No. 1. NaOH pretreatment was also given.

BIHAR

2. SONPUR, DISTRICT GAYA

TF-376. Pre-N. B. P. Ware deposits. 2585 ± 110 (635 B.C.)
Charred rice from Sonpur; pit sealed by layer 9; depth 4.5 m. below surface; field No. SPR-XII.

3. SARADKEL, DISTRICT RANCHI

TF-369. Asura Culture. 1970 ± 90 (20 B.C.)
Charcoal from Trench SDK-2; locus C3-C4; layer 3; depth 0.01 m. (?) below surface; field No. SDK-2/65-114. NaOH pretreatment was also given.

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1 Contributed by Shri D.P. Agrawal.

2 Samples submitted: 1, 3, 6, 8, 9, 10, 11, 12, 18 and 21, by the Archaeological Survey of India ; 2 and 4, Department of Archaeology, Government of Bihar; 5, by the M. S. University of Baroda; 7, by the University of Saugar; 13, 14, 15 and 16 by the Deccan College Post-graduate and Research Institute; 17, by the Department of Archaeology, Government of Mysore; 19, 20, 23, 24 and 25, by the University of Allahabad; 22, by the Aligarh Muslim University and 26, by the Banaras Hindu University.

4. CHIRAND, DISTRICT SARAN

(i) TF-336. Black-and-red ware deposits. 2715 ± 100 (765 B.C.)
Charcoal from Trench GRD-VIIB; layer 14; depth 8.5 m. below surface.
Comment: the sample belongs to Period IB.

(ii) TF-334. Black-and-red ware deposits. 2795 ± 125 (845 B.C.)
Charcoal from Trench CRD-VIID; layer 18; depth 12.5 m. below surface.
Comment: The sample belongs to Period 1A.

GUJARAT

5. NAGARA, DISTRICT KAIRA

(i) TF-364. Historical period. 2085 ± 105 (135 B.C.)
Charcoal from NGR II (?) ; Trench III; layer 16; depth 4.4 m. below surface; sample No. 1949.
Comment: Date in agreement with archaeological estimate.

(ii) TF-362. Historical Period. 2000 ± 90 (50 B.C.)
Charcoal from NGR II; Trench III; layer 13; depth 3.3 m. below surface; sample No. 1947.
Comment: Date in agreement with archaeological estimate.

JAMMU AND KASHMIR

6. BURZAHOM, DISTRICT SRINAGAR

TF-129. Neolithic Culture. 3775 ± 100 (1825 B.C.)
Charcoal from Trench BZH-1; locus XIXx-XXIIx; layer 13; depth 2.9 m. below surface; field No. BZH-1/62.
Comment: Several samples have been measured from this site. The available C-14 dates suggest a spread of *circa* 2300-1500 B.C. for this Northern Neolithic Culture.

MADHYA PRADESH

7. ERAN, DISTRICT SAGAR

(i) TF-326. Period Ha. 2990 ± 110 (1040 B.C.)
Charcoal from ERN-7; locus IV'-IX'; layer 16; depth 6.3 m. below surface; sample No. ERN-7/C/62-63/3.
Comment: Sample derives from Period Ha, immediately following the Chalcolithic Period.

(ii) TF-324. Period Ha. 3220 ± 110 (1270 B.C.)
Charcoal from ERN-7; locus O'-IV; layer 14; depth5.6 m. below surface; sample No. ERN-7/C/62-63/1.
Comment: Sample derives from Period Ha, following the Chalcolithic Period,

(iii) TF-327. Period I. 3375 ± 105 (1425 B.C.)
Charcoal from ERN-7; locus VI'-IX'; layer 17; depth 6.8 m. below surface; sample No. ERN-7/C/62-63/4.
Comment: Sample belongs to Chalcolithic Period.

(iv) TF-329. Period I. 3395 ± 110 (1445 B.C.)
Charcoal from ERN-7; locus VI'-IX'; layer 19; depth 7.5 m. below surface; sample No. ERN-7/C/62-63/6.

(v) TF-331. Period I. 3450 ± 95 (1500 B.C.)
Charcoal from ERN-7; locus IV'-IX'; layer 21; depth 8 m. below surface; sample No. ERN-7/C/62-63/8.
Comment: Compare TF-330 from layer 20 of the same trench.

(vi) TF-330. Period I. 3315 ± 100 (1365 B.C.)
Charcoal from Trench ERN-7; locus IV'-IX'; layer 20; depth 7.6 m. below surface; sample No. ERN-7/C/62-63/7. _
Comment: Sample belongs to Chalcolithic levels.

8. BESNAGAR, DISTRICT VIDISHA

TF-387. N. B. P. Ware deposits. 2420 ± 105 (470 B.C.)
Charcoal from Trench BSN-4; locus Gl; layer 8; depth 3 to 3.15 m. below surface; field No. 1850.

MADRAS

9. BAINPALLI (PAIYAMPALLI), DISTRICT NORTH ARCOT

(i) TF-350. Post-Megalithic Period. 2330 ± 105 (380 B.C.)
Charred grain from Trench BNP-1; locus Cl; pit 4; sealed by layer 3; depth 1.30 m. below surface; field No. BNP-l/C 1/64-2. Visible rootlets were handpicked,

(ii) TF-349. Neolithic Period. 3435 ± 100 (1485 B.C.)
Charcoal from Trench BNP-1; locus Al; layer 6; depth 1.8 m. below surface; field No. BNP-l/A 1/64-1, NaOH pretreatment was also given.

10. KILAYUR, DISTRICT THANJAVUR

TF-207. Black-and-red Ware deposits. 2265 ± 100 (315 B.C.)
Wood from Trench KLR-1; locus A2; layer 4; depth 1.25 m. below surface.
Comment: This wooden post was embedded in backwaters of the sea.

MAHARASHTRA

11. BHAJA, DISTRICT POONA

TF-245. Buddhist rock-cut caves. 75 ± 90 (A.D. 1875) Wood from Bhaja excavation; field No, AR-11

Comment: the sample appears to be derived from a recent repair.

12. KARLA, DISTRICT POONA

TF-185. Buddhist rock-cut cave. 2245 ± 95 (295 B.C.)
Wood rib from Chaitya Cave No. 8. NaOH pretreatment was also given.

13. MULA DAM, DISTRICT POONA

(i) TF-217. Pleistocene deposits. > 39,000
Wood from "Pleistocene deposits" at R. L. 1645 from old bed of Mula River, exposed during engineering operations. Sample No. 1. NaOH pretreatment was given.
Comment: no tools are reported from these deposits. Sample level is below the present water-table.

(ii) TF-345. Pleistocene deposits. 31980 ± 1350
Wood from "Pleistocene deposits" at R. L. 1640 from old-bed of Mula River, exposed during engineering operations. Sample No. 2. NaOH pretreatment was also given.
Comment: From the uppermost alluvium a few Middle Stone Age and Late Stone Age tools have been recovered. Sample level is below the present water-table.

14. SONEGAON, DISTRICT POONA

(i) TF-379. Jorwe Culture. 3240 ± 95 (1290 B.C.)
Charred grain from Mound II; layer 2b; depth 1.2 m. below surface; sample No. 3 (1965).

(ii) TF-380. Jorwe Culture. 3325 ± 110 (1375 B.C.)
Charcoal from Mound II; layer 4; depth 1.8 m. below surface; sample No. 4 (1965).

MYSORE

15. SANGANKALLU, DISTRICT BELLARY

(i) TF-354. Neolithic Period. 3540 ± 110 (1590 B.C.)
Charcoal from Trench 1-2; layer 3; depth 2.5 m. below surface; field No. SKL/Tr. 1-2/64-65/393.
Comment: Sample belongs to an early level.

(ii) TF-359. Neolithic Period. 3500 ± 105 (1550 B.C.)
Charcoal from Trench 1-2; layer 4; depth 2.4 m. below surface; field No. SKL/Tr. 1-2/64-65/588.
Comment: Sample comes from an early level.

16. HALLUR, DISTRICT DHARWAR

(i) TF-580. Neolithic Period. 3660 ± 105 (1710 B.C.)
Charcoal from Trench-1; layer 14; depth 6.1 to 6.4 m. below surface; sample No. 11; field No. HLR/1965.
Comment: Sample belongs to an early level.

(ii) TF-575. Neolithic Period. 2980 ± 105 (1030 B.C.)
Charcoal from Trench-1; layer 7; depth 3.2 m. below surface ; sample No. 6, field No. HLR/1965.
Comment (excavator): Sample derives from the latest neolithic phase immediately prior to the arrival of the megalithic people.

(iii) TF-573. Overlap Phase. 2905 ± 100 (955 B.C.)
Charcoal from Trench-1; layer 5; depth 2.5 to 3.5 m. below surface; sample No. 4/1965.
Comment: Sample belongs to the Mcgalithic-Neolithic phase.

(iv) TF-570. Overlap Phase. 3055 ± 105 (1105 B.C.)
Charcoal from Trench-1; layer 4; depth 1.8 to 2.1 m. below surface; sample No. 1, 1965.
Comment: Sample belongs to the Megalithic-Neolithic Overlap Phase.

17. T. NARASIPUR, DISTRICT MYSORE

(i) TF-414. Megalithic Period (?). 225 ± 90 (A.D. 1725)
Charcoal from T. N. 24A; locus C-D; layer 3A; depth 0.68 m. below surface; sample No. 3, 1965.
Comment: Sample is much younger than expected.

(ii) TF-413. Neolithic Period. ' 3445 ± 110 (1495 B.C.)
Charcoal from T. N. 24A; locus C-D; pit IV sealed by layer 6 (?); depth 1.8 m. below surface; sample No. 2, 1965.

(iii) TF-412, Neolithic Period. 3755 ± 110 (1805 B.C.)
Charcoal from T. N. 24A; locus A-B; layer 6; depth 1.6 m. below surface; sample No. 1, 1965.

PUNJAB

18. RUPAR, DISTRICT AMBALA

TF-213. N. B. P. Ware deposits. 2340 ± 105(390 B.C.)
Charred wood from Trench RPR-1; locus O-VIII; layer 26; depth not given; field No. RPR-1-1710.

UTTAR PRADESH

19. KOTIA, DISTRICT ALLAHABAD

(i) TF-320. Megalithic (?) Period. 490 ± 100 (A.D. 1460)
Charcoal from Kotia-Meg. IV; depth 0.1 to 0.6 m., below surface; field No. KTA (A) 64/3504.

(ii) TF-322. Megalithic (?) Period. 585 ± 100 (A.D. 1365)
Charcoal from Kotia-Meg. VA; depth 0.15 to 0.25 m. below surface; field No. KTA (A) 643506.

(iii) TF-321. Megalithic (?) Period. 995 ± 100 (A.D. 955)
Charcoal from Kotia-Meg. V; depth 0.25 to 0.35 m. below surface; field No. KTA (A) 64/3505.

(iv) TF-318. Megalithic (?) Period. 225 ± 100 (A.D. 1725)
Charcoal from Meg. I; depth 0.15 to 0.3 m. below surface; field No. KTA (A) 64/3501.
Comment: So young a date can be possible only due to intrusion of recent charcoal.

(v) TF-319. Mcgalithic (?) Period. 2200 ± 105 (250 B.C.)
Charcoal from Meg. II; depth 0.1 to 0.55 m. below surface: field No. KTA (A) 64/3502.
General Comment: All the dates, except TF-319, are much younger than expected. Such divergent dates can be explained only by large scale incorporation of younger carbon or disturbance in stratification. The excavator has pointed out black roots which could be mistaken for charcoal in that area.

20. MAINAHAI, DISTRICT ALLAHABAD

TF-347. Historical levels. 1460 ± 95 (A.D. 490)
Charcoal from Trench MNH/BWN-1; locus 0-3; layer 6 N; depth 0.75 m. below surface.

21. AHICHCHHATRA, DISTRICT BAREILLY

(i) TF-301. Defences. 2320 ± 105 (370 B.C.)
Charcoal from locus CXIII-CXIV; layer 1; depth 0-8 m. below surface; field No. 2. Visible rootlets were handpicked.
(ii) TF-317. Late Painted Grey Ware deposits (?). 2220 ± 105 (270 B.C.)
Charcoal from high mound; locus X-XI; layer 15; depth 3-4 m. below surface; field No. 214 (H. M.).
Comment: Sample belongs to disturbed strata,
(iii) TF-296. Historical levels. 670 ± 95 (A.D. 1280)
Charcoal from high mound; locus VIH'-IX'; layer 15; depth 3-15 m. below surface; sample No. 24; field No. 194 (H. M.).
Comment: Archaeological date not intimated,
(iv) TF-310. N. B. P. Ware deposits. 2110 ± 95 (160 B.C.)
Charcoal from high mound; locus XI-XII; pit no. 4, sealed by layer 8 A; depth 0-5 m. below surface; field No. 177 (H. M.). (v) TF-311. N. B. P. Ware deposits. 2425 ± 105 (475 B.C.)
Charcoal from high mound; locus IX'-X'; pit no. 5 sealed by layer 14; depth 3-8 m. below surface; field No. 196 (H. M.).
Comment: These deposits also yield Painted Grey Ware.

22. ATRANJIKHERA, DISTRICT ETAH

(i) TF-283. N. B. P. Ware deposits. 2210 ± 105 (260 B.C.)
Charcoal from Trench ARJ-4; locus A1 (NE); layer 27; depth 4.85 m. below surface; field No. ARJ-4/64-1.
(ii) TF-284. N. B. P. Ware deposits. 2245 ± 100 (295 B.C.)
Charcoal from Trench ARJ-4; locus Al (SW); layer 29; depth 5 m. below surface; field No. ARJ-4/64-2. NaOH pretreatment was also given,
(iii) TF-194. N. B. P. Ware deposits. 2480 ± 85 (530 B.C.)
Charcoal from Trench ARJ-4; locus Al (NW); layer 16; depth 3.1 m. .below surface.
(iv) TF-291. Painted Grey-Ware deposits. 2485 ± 100 (535 B.C.)
Charcoal from Trench ARJ-4; locus Dl (SE); layer 6; depth 2.50 m. below surface; field No. ARJ-4/64-9.
Comment: The sample belongs to the late levels.

23. BAGHAIKHOR, DISTRICT MIRZAPUR

TF-187. Rock-shelter. 280 ± 125 (A.D. 1670)
Charcoal from Trench BGK-Tr.3; locus 2-3; pit A, sealed by layer 1; depth 0-1 m. below surface; field No. BGK(M)-63/3001. NaOH pretreatment was also given. Comment (excavator): As these shelters have been used till today to light fires by shepherds, later intrusion cannot be ruled out.

24. MORAHANA PAHAR, DISTRICT MIRZAPUR

TF-188. Rock-shelter. 1575 ± 100 (A.D. 375)
Charcoal from Trench MRA; Locus 1-2; pit A, sealed by layer 1; depth 0-09 m. below surface; field No. MRA(M)-63/3002. Comment: Sample is much younger than expected.

25. KAKORIA, DISTRICT VARANASI

TF-179. Megalithic habitation. 200 ± 95 (A.D 1750)
Charcoal from Trench KKR-I-A1; locus O-III; pit E, sealed by layer 1; depth 0-7 m. below surface; field No. KKR-1 (v)-63/1502. NaOH pretreatment was given. Comment: Date is much younger than expected.

26. RAJGHAT, DISTRICT VARANASI

(i) TF-293. N. B. P. Ware deposits. 2440 ± 110 (490 B.G.)
Charcoal from Trench RGT-XI; locus XI-XII; layer 11; depth 9-45 m. below surface; field No. RGT-XIA/1963-64-S. No. 2.
Comment: The sample belongs to an early phase of the N. B. P. Ware. (ii)
TF-292. Black-slipped ware deposits. 2420 ± 100 (470 B.C.)
Charcoal from Trench RGT-Cutting B; locus O'-II'; layer 6; depth 5-9 m. below surface; field No. RGT Cutting B/1963-64-S. No. 5.
Comment: In the preceding layer there is evidence of flood.

2. HIGHLIGHTS OF THE DATES

On the basis of C-14 datings, the following time-spreads can now be assigned :
N. B. P. Ware: *circa* 500—50 B.C.
Chalcolithic Culture: *circa* 1750—1000 B.C.
Harappa Culture: *circa* 2300—1750 B.C.

For other cultures, the picture is not so clear and more measurements are still required to build up a framework of chronology. The few measurements that we have for the Painted Grey Ware indicate a maximum spread *of circa* 1000-400 B.C. Fifth century B.C. appears to be a century of overlap between the Painted Grey and the N. B. P. Wares.

Available measurements for the Northern (Kashmir) Neolithic Culture show a spread *of circa* 2300-1500 B.C. For the Southern Neolithic culture, C-14 dates show that the time-spread was *circa* 2300-900 B.C. Towards its end it is shown to overlap with the Megalithic Culture.

If samples TF-326 and TF-324 are from the undisturbed levels, Period Ila of Eran is to be ascribed to *circa* 1300-1000 B.C., contemporary to Jorwe Culture.

The black-and-rcd ware of the Bihar region has so far only a few determinations; these, however, indicate its beginning in the first quarter of the first millennium B.C. Iron appears there around seventh-eighth centuries B.C.

For the first time, Asura culture of Saradkel (Ranchi) has been dated to the beginning of the Christian era.

Pleistocene deposits of the river Mula too have been dated for the first time.

VI. MUSEUMS

1. SITE-MUSEUM, AHAR.—A new room was added to the existing museum-building and is being re-organized into a gallery. For the existing galleries, wall-cases were prepared for terracottas, and bases provided for the display of epigraphs.

2. RAJPUTANA MUSEUM, AJMER.—The rooms formerly occupied by the Tahsil courts were connected with each other and were re-organized into a gallery for sculptures, terra cottas, etc. Wall-cases were prepared for paintings and terracottas.

3. ALLAHABAD MUSEUM, ALLAHABAD.—The Museum acquired forty-three terra cotta figurines, forty-three beads, twenty-eight seals and sealings and one coin (silver-mixed gold) of Sasanka. Noteworthy among these were: a Sunga plaque depicting the elopement of Vasavadatta with Udayana; a figure of Lakshmi standing on a fully-blossomed lotus-flower rising inside a pond along with its mould; an amorous couple in the company of two attendants; two Kushan heads; sealings bearing legends like *Dharmaghosha, Magha, Vasa* and *Bhattimitrasya* and a beautiful standing figurine of goddess Tara holding a lotus-stalk in her left hand and with the right hand in *varada-mudra* (ascribable to *circa* sixth-seventh century A.D.).

4. GOVERNMENT MUSEUM, ALWAR.—Two hundred and thirty paintings were provided with *kalamkhush* mounts. Besides, for a more effective display of paintings, the old screens were converted into wall show-cases and fitted in the arches of the walls.

5. ARCHAEOLOGICAL MUSEUM, AMARAVATI.—The selection of sculptures which are intended to be exhibited in the new museum-building is being finalized, and their mending, wherever required, has been taken up.

6. ARCHAEOLOGICAL MUSEUM, AMBER.—Wall-cases were provided for the display of pottery, terracottas and other portable finds which were arranged in a chronological sequence.

7. MUSEUM AND PICTURE-GALLERY, BARODA.—A phased programme of changing the old display in the Archaeology Section was continued during the year under review. Three show-cases displaying (i) Gandhara art (PI. LIV A), (ii) Sunga, Indo-Scythian, Kushan and Gupta Art, and (iii) Nataraja, were taken up under this programme. In the former two show-cases, the linear monotonous arrangement of exhibits was replaced by a modern display heightened with beautiful colour-and-light effects. The dancing Siva, a beautiful Chola bronze of the eleventh century A.D., was displayed in a new modern setting.

Of the several acquisitions made by the Museum during the year, the following deserve special mention: (i) one Persian stone inscription from Mehmdabad (central Gujarat) discovered by the Department of Archaeology, Government of Gujarat, and handed over to this institution by the Assistant Director of Archaeology, and (ii) wooden sculptures, including a trellis window (pi. LIV B), belonging to different periods and from different parts of Gujarat. Besides, the Judicial Magistrate, Chhota Udaipur, sent

five gold coins of Ghiathu'd-Din Tughluq. The Assistant Director of Archaeology, Government of Gujarat, also sent five gold coins of Akbar and one hundred and forty-nine Venetian gold coins.

8. STATE MUSEUM, BHARATPUR.- -Pedestals for sculptures and wall-cases for pain tings were provided and sculpture and painting galleries re-organized. Two new sections on epigraphs and portable sculptures were opened.

9. STATE MUSEUM, BHUBANESWAR.—The Manuscript Library of the Museum acquired new manuscripts. The illustrated manuscript on *Gita-Govinda* was displayed for the first time. The paintings of Lavanyavati by B. Verma and of Kama-Kunyari have been received as gifts.

10. ARCHAEOLOGICAL MUSEUM, BIJAPUR.—The re-organization of the galleries on the first floor of the Nagarkhana has been completed. This included weeding out unwanted objects, disposal of outdated show-cases, provision of proper background colour for the walls and coir-matting for the floors. Special glass-panes were provided to avoid direct sunlight entering the premises.

11. GANGA GOLDEN JUBILEE MUSEUM, BIKANER.—For the safety of objects, separate store-rooms were provided. Detailed card-catalogues of the exhibits were prepared for sculptures, terracottas, bronzes and epigraphs.

12. ARCHAEOLOGICAL MUSEUM, BODH-GAYA.—Five railing-pillars with cross-bars and coping-stones, forming part of the Bodh-Gaya temple-railings of the first century B.C., were acquired for the Museum, and, in exchange, cement-casts of the above railings are being prepared and fixed in the temple-compound. Besides, two terracotta heads from Guneri, District Gaya, were also added to the collection. In the smaller Antiquities Room, three more small sculptures belonging to the ninth-tenth century A.D., were displayed on newly-designed wall-brackets.

13. PRINCE OF WALES MUSEUM OF WESTERN INDIA, BOMBAY.—The pending work of the Select Indian Bronze GaHery was completed. This Gallery, containing forty-one bronzes, is equipped with modern show-cases and lighting arrangement.

As the Nepal and Tibetan Gallery was to be extended, the bronzes from the old Bronze Gallery were shifted to the Metal Gallery in the extension building and were exhibited there. The old show-cases, however, were dismantled.

Case-wise lists and location registers of the exhibits of the Prehistoric and Protohistoric Gallery were completed.

Two sculptured panels and a *gana* figure from Ambarnath temple, District Thana, was received on loan from the Archaeological Survey of India. Three sculptures of Vishnu (pi. LV A), Mahishasuramardini and Ganesa, found at Jondhali-Baug, Thana, were acquired under the Treasure-trove Act and presented to the Museum by the Collector of Thana.

Six copper coins of Asaladeva of Narwar, from District Jhansi, and seventy-five Muslim billon coins from District Bara Banki, were presented to the Museum by the Government of Uttar Pradesh.

Among other exhibits of special importance acquired for the Museum were: a late Chola stone sculpture of Vrishabhavahana Siva; a bronze Buddha (pi. LV B) from Kashmir of *circa* tenth century; two Pala bronzes, Vrisharudha Siva and a panel of Gancsa; Vasudhara, Ambika and Bhairava from East Bengal; a terracotta female bust of Gupta period; terracottas; and beads from Kausambi.

14. ASUTOSH MUSEUM OF INDIAN ART, CALCUTTA.—The collection of the Museum was greatly enriched by the addition of about one thousand objects obtained through excavation, exploration, purchase and loan. The antiquities consist mainly of terracottas, bronzes, wood and ivory carvings, medieval paintings, textiles and objects of traditional art.

Two sandstone sculptures of the Gupta period from Sarnath, one headless Dhyani-Buddha and a torso of standing Buddha and four stone architectural pieces of *circa* tenth-eleventh century showing Ganga and Yumuna on door jamb and a pair of *nayika* and *sardula* from Khajuraho were received on loan from the Archaeological Survey of India. The Museum also received, from the same source, a representative set of protohistoric and early historical pottery from Ahichchhatra, Gilund, Hastinapura, Lothal and Nagda. The Uttar Pradesh Coin Committee presented six medieval and Mughal copper coins obtained through treasure-trove. A fairly large number of important objects of art and antiquity including a gold coin of Chandragupta II of the archer-type, from Buro-Burir-that, Sunderban, were also acquired through purchase. Among other objects, particular mention may be made of: a brass Hara-Parvati; a lamp-stand with bull and lion of *circa* eighteenth century from Bankura; a brass vase of *circa* nineteenth century from Brindavan engraved with epic and Puranic legends and a set of wooden sculptures of *circa* eighteenth century from Ganjam in Orissa.

The collection of paintings was enriched by the acquisition of Rajasthani miniatures of different schools, besides several long painted *jdtapatras* of the early seventeenth century on cloth and paper, *vijnapati-patra* of the same date, an illuminated manuscript and a pair of large painted manuscript-cover from Orissa, datable to *circa* eighteenth century. Noteworthy additions to the contemporary art comprised some textiles from Bengal, including richly-embroidered Baluchar *saris* from Murshidabad, *kanthas* from Jessore and a number of scroll-paintings of the Vaishnava faith from Districts Bankura, Birbhum and Midnapur.

As usual, a large number of this year's acquisition of terracotta objects came from Chandraketugarh and its neighbourhood in the lower deltaic Bengal. More than a hundred pieces of terracotta figurines, both male and female, toy-carts, erotic tablets, seals and sealings, ranging from *circa* sixth century B.C. to sixth century A.D., were recovered. Shri Binoy Krishna Biswas collected: two mutilated plaques {*circa* second century B.C), one showing the upper part of a winged male figure, and the other of female figure holding lotus stalks; terracotta plaques showing *abhisheka* of Airavata of the Pauranic legend, a portrait of a male, a toy-cart showing a demon, a prince riding an elephant and the lower part of an amorous couple.

As a result of explorations at Patna, Rajgir and Nalanda in Bihar, Shri Roychoudhury acquired several antiquities dating from *circa* third century B.C. to tenth century A.D. Noteworthy among these were, a mutilated mother-and-child plaque, a head of a male figure from Kumrahar, a sealing from Nalanda, a square copper coin of Eucratides, a copper Soter Megas coin and thirteen silver punch-marked coins.

Shri Adyanath Mukherjee explored south-western part of Orissa and collected some interesting pottery from Ratnagiri and adjoining areas. As a result of intensive exploration in District Murshidabad of West Bengal, he acquired a black basalt figure of Lakshmi and

a side-figure of Vishnu of *circa* eleventh century, Uma-Mahesvara of *circa* twelfth century, and medieval paper manuscript of the *Brahmavaivarta-Purana.*

Shri Taran Kumar Biswas collected some interesting pottery from Tamluk. Shri Biswa Narayan Roy obtained a mutilated black basalt Dasavatara panel showing Matsya and Kurma *avataras* in purely anthropomorphic forms from Santipur, District Nadia.

15. STATE ARCHAEOLOGICAL GALLERY, CALCUTTA.—On the 28th January, 1966, a new wing of the State Archaeological Gallery called 'The Prehistoric and Early Antiquities Section' was inaugurated by the Minister for Public Works and Housing Departments, Government of West Bengal. In this Section, special emphasis is laid on the prehistory and protohistory of West Bengal. On this occasion, an exhibition on different aspects of ancient Indian art and culture was also arranged.

Among the objects acquired by the Directorate of Archaeology during the period under review, special mention may be made of: a beautiful bronze Buddha (height 6-49 cm.) in *dharmachakrapravartana-mudra*, stylistically belonging to *circa* eleventh century from Pathpukur in Jaynagar, District 24-Parganas; a stone sculpture of four-armed Vishnu (height 70 cm.) of about the ninth century from District West Dinajpur; a number of illuminated folios of a *Bhagavata* manuscript of the Bikaner school of about the eighteenth century; a Jaina *mandala-chilra* on cloth of about seventh century; and a set of nine Rajasthani line-drawings, depicting Vaishnava *acharyas* of about eighteenth century, besides an old *Behula pat {circa* nineteenth century) and a bronze figure of seated four-armed Chandi *(circa* fourteenth century). A good number of Rajasthani, Pahari, popular Mughal and Deccan paintings were purchased along with various examples of late medieval brasses of Bengal, showing deities and ritualistic objects. Another valuable acquisition of the year was an original letter (pi. LVI), dated 5th August, 1783, from Warren Hastings to Raja Gurudas, son of Maharaja Nandakumar, containing references to the revenue system instituted by the East India Company.

16. BHURI SINGH MUSEUM, CHAMBA.—Fifteen Pahari paintings, four stone sculptures, three bronze images, one inscribed copper-plate, one manuscript on palm-leaves, twenty-two objects of local handicrafts and of other miscellaneous nature and twenty-three photographs and prints of important sculptures and monuments of India were acquired for the Museum through purchase, exploration and gift. One sepulchral stone slab, showing two figures carved in flat and angular technique, acquired from village Tur, Pargana-Basu, Tahsil Chamba, is of great anthropological interest.

The sculptures and inscriptions in the Museum were rearranged and provided with suitable labels. For better display, photographs of sculptures of different periods were also exhibited.

Some stone sculptures, showing signs of disintegration, were properly treated and were given a coating of an inert material for their preservation. A Preservation Assistant of the Survey, who had come to Chamba for the preservation of the protected monument of Sita-Rama temple, provided much help in this work.

An exhibition of prints of Indian paintings from the beginning to the modern times was held.

17. CHANDRADHARI MUSEUM, DARBHANGA.—The Museum obtained from Kumrahar many objects including fifteen coins, one hundred and fifty-three terracotta figurines, flesh-rubbers, decorated and moulded bricks and some pottery. During the erection of the Kosi

embankment near Kunouli, District Saharsa, some bricks and pottery were found and sent to the Museum by Shri Ramkrishna Singh and Shri Amrudha Singh. Some grinding-stones, fragments of bricks, and terracottas of the Pala period were obtained from Jainagar, District Darbhanga. An old club, iron shackles for a tusker and a massive iron-lock were presented to the Museum by a donor.

The northern verandah of the present museum-building was made available for display of archaeological objects. The large hall, constructed under a central scheme of extension and addition in the present museum-building was set apart for a gallery displaying mostly paintings and models produced by the cultural section of this Museum.

18. ARCHAEOLOGICAL MUSEUM, RED FORT, DELHI.—A red sandstone tomb-stone slab, dated A.H. 1186, was acquired. An epitaph was recovered from below the foundations of the demolished city-wall adjoining the Kashmere gate. Twelve portraits of Mughal emperors and three other exhibits—sketch of a harem-carriage, Delhi *darbar* scene and a plan of Delhi city—*of circa* nineteenth century were mounted and displayed with appropriate labels against a suitable masonite background in the main gallery.

19. ASSAM STATE MUSEUM, GAUHATI.—The Archaeological Section of the Museum was enriched by the addition of the following objects: a standing richly-ornamented female figure with two hands [*circa* ninth-tenth century); a head of a male figure with a canopy of full-blown lotuses (*circa* ninth-tenth century); a monkey grasping the right leg of a human figure of which only the legs are extant (*circa* ninth-tenth century); an octagonal pillar with carvings of four human figures—two males and two females on four sides (*circa* tenth-eleventh century); copper-plate inscription of the Ahom king Rudrasingha within a well-polished stone case; a gun used by Maniram Dewan who was executed in 1858 for his association with the upheaval of 1857; and three Australian silver coins. A *majankari chola* (gown) showing gold embroidery and a silk *chapkan* (gown), both about two hundred years old, were acquired.

Art-objects have now been rearranged in the upper storey of the Museum-building and displayed in glass show-cases in an attractive manner with internal lighting-arrangements. A new section of geology was started with generous gifts from the Geological Survey of India, Assam Circle, Shillong. The exhibits include rock and mineral specimens of Assam. These will be supplemented with petrological maps and charts.

20. ARCHAEOLOGICAL MUSEUM, HALEBID.—During the year under review, an open-air museum was established near the Hoysalesvara temple with selected sculptures and architectural pieces from Halebid and the neighbouring area. The sculptures were displayed on suitably-designed masonry pedestals with trilingual labels. A beautiful Nataraja in stone and a colossal standing Jaina *tirthankara*, found in a cultivated field, were acquired.

21. ARCHAEOLOGICAL MUSEUM, HAMPI.—Three plaster-cast images of Krishnadevaraya and his two consorts, prepared out of the original bronzes in the Tirupati temple, were coloured and displayed with proper background. Thirteen sculptures in the Guards' Quarters were provided with suitable wooden pedestals. Genealogical tables of the different dynasties which ruled over the region and maps showing the extent of the Vijayanagara empire in its heyday and the location of important ruins were also prepared. Three sculptures were sent to the Indian Museum, Calcutta, on loan.

22. CENTRAL MUSEUM, JAIPUR.—The re-organization of the galleries on the ground floor was completed. Lower galleries were modernized by making the rooms on either side of the central hall conform to one pattern for the cases of the dioramas and the arts and crafts of Rajasthan. The galleries at the back of the middle section were rearranged and given finishing touches. The gallery showing Rajasthan culture was provided with an introductory descriptive note. Descriptive labels were provided to the first two rooms and the main hall.

In order to combine auditory with visual effects, demonstrated through functional displays in the central hall, auditory devices were provided in the hall so that the displays could give both visual and auditory appeals to the visitors in the Central Hall. Ear-phones have been provided so that this section remains a place for a serious student as also for a casual visitor.

A sound column has been provided in the Gallery of Evolution. It is meant to disseminate knowledge about the art and culture of Rajasthan. Arrangements are being made to broadcast within the Gallery tape-recorded talks on different aspects of the culture of the State on the basis of the exhibited terracottas, paintings, sculptures, arms, etc. In order to impart mass-education, a film projector was purchased.

23. ARCHAEOLOGICAL MUSEUM, JHALAWAR.—A verandah and a large hall were acquired from the Public Works Department and added to the Museum-building. Necessary additions and alterations were made to them to suit the needs of a museum. Pedestals were prepared for sculptures.

24. SARDAR MUSEUM, JODHPUR.—With a view to relieving congestion in the galleries, wall-cases were prepared to replace the existing show-cases for arts and crafts.

25. ARCHAEOLOGICAL MUSEUM, KHAJURAHO.—The Museum is being re-organized in the new building which will contain five galleries arranged as follows: Key; Vaishnavite; Saivite; Jaina; and Miscellaneous. In the open area in front of the building, some architectural pieces will be displayed.

Some sculptures from this Museum were sent on loan to the Indian Museum and Asutosh Museum, Calcutta.

26. ARCHAEOLOGICAL MUSEUM, KONARAK.—About one thousand sculptures were transferred from the site of the monument for the organization of the Museum here in the new building. The selection of sculptures for display is in progress.

27. ARCHAEOLOGICAL MUSEUM, KONDAPUR.—Four new wall show-cases were added to the galleries in the front verandah and neoliths, animal-bones and publications for sale were exhibited therein.

28. MUSEUM AND SARASWATI-BHANDAR, KOTAH.—Decent wall-cases intended for displaying paintings were provided in the uppermost storey and the verandah of the Museum.

29. STATE MUSEUM, LUCKNOW.—A new gallery displaying mainly manuscripts, arms, textiles and a representative set of archaeological finds and sculptures was added to the Museum. Eleven stone sculptures of *circa* twelfth-thirteenth century were obtained from Tunera, village Sodin, Tahsil Karna-Prayag, District Chamoli.

30. GOVERNMENT MUSEUM, MADRAS.—The acquisition comprised: one bronze from Anantapuram, Taluk Polur, District North Arcot; four bronzes from Avanam Paruthiyur, Taluk Nannilam, and six bronzes from Chidambranathapuram, Taluk Kumbakonam, District Thanjavur; and four bronzes from Mangamalpuram, Taluk Lalgudi, District Tiruchchirappalli. Besides, one copper-plate grant of Koravi-kodai and copies of mural paintings from Kanchipuram and Tirumalai were added to the collection. A few miscellaneous articles, including a painting entitled Kumarasambhava (Mysore tradition), and *kavachas*, were purchased from a local dealer. Twelve colour-reproductions from Pallas Art Gallery and four old paintings, purchased from a local dealer were added to the National Art Gallery collections.

In the Archaeology Section, improved labels were provided for the bronzes. Rcfcrcncc-cards were introduced in the modernized show-cases of the Metalwarc Gallery. The copies of the murals, provided with rosewood frames and glass panes, were exhibited in the Picture Gallery. The pith-models were repaired and re-exhibited. Twelve photographs pertaining to Buddhism were added to the New Buddhist Gallery which had been thrown open to the public last year. A special exhibition during the 'Freedom from Hunger Campaign' was arranged by the Section in collaboration with other Sections.

A stone sculpture and four wood-carvings were loaned to the Public Works Department, Madras, for permanent display at Madras House, New Delhi. Two lotus-medallions and six wood-carvings were transferred to the Government of Andhra Pradesh for display in the State Museum, Hyderabad.

31. MUSEUM OF ARCHAEOLOGY, MATHURA.— Four terracotta figurines, four paintings, two Gupta silver coins and a few other antiquities were acquired by the Museum. Of them, the most outstanding was a terracotta mother-goddess (pi. LVII A) belonging to *circa* second century B.C. The figure, broken in four pieces, stands on a rectangular pedestal with its right hand placed on the breast indicating probably motherhood. The hair is profusely decorated and the ears show various ornaments. The left hand, held akimbo, is broken. Other ornaments, all applied, include the torque, armlets, bracelets, girdle and anklets. The figure compares favourably with the standing female figure from Buxar in the Patna Museum. Also noteworthy is a headless terracotta figurine of goddess Durga, shown with a lion belonging to *circa* second-third century A.D. The depiction of a lion near the feet of the deity at such an early period is a rare feature. Yet another interesting terracotta piece is a miniature plaque resembling a rail-post from Ral-Bhadar, showing a *salabhanjika-motif:*, similar in treatment of style to the famous Kushan railing-pillar figurines. Among the paintings, the best one depicts Krishna milking a cow.

The most significant work of the year was the setting up of a new Terracotta Gallery, having modern techniques of artificial lighting arrangement. Based on a chronological sequence, thirteen show-cases of a special type display the selected and most representative terracottas of Mathura. Adding variety to the Gallery is a false wall-panel decorated with the original terracotta figurines and panels of the Gupta Period.

Under the scheme of re-organizing the galleries, the Sunga and Gandhara Galleries were re-arranged by elevation of pedestals, introduction of show-cases and the addition of better exhibits.

On the occasion of the visit of H. M. the King of Nepal, the Museum organized a temporary exhibition of Katra finds at the Sri Krishna Janmasthan.

32. ARCHAEOLOGICAL MUSEUM, MT. ABU.—A new Museum was opened at Mount Abu on the 27th December, 1965. Wall-cases and pedestals were prepared and the objects displayed in the modern way.

33. ARCHAEOLOGICAL MUSEUM, NAGARJUNAKONDA.—The excavated objects, extending from the Early Stone Age to the historical period, have now been displayed (pi. LIX A) in the new Museum-building on the hill-top.

34. CENTRAL MUSEUM, NAGPUR.—Four copper and five billon coins were received for the coin-cabinet from the Secretary, Coin Committee, State Museum, Lucknow, Uttar Pradesh.

The arrangement of exhibits in the Central Hall was changed. The central case in this Hall now exhibits the recently-acquired antiquities from Kaundinyapur. The Stone Age finds, objects from Mohenjo-daro and Harappa, Gandhara sculptures, Jaina bronzes from Rajnapur-Khinkhini, plaster-casts of early and medieval sculptures and electroplated casts of coins, which so far were exhibited in the Sculpture Gallery, are now displayed in this Hall.

In one of the central cases in the Sculpture Gallery, a representative collection of copper-plates was displayed. Other cases in this Gallery show small sculptures including some interesting specimens of tribal art.

The two stone inscriptions received last year from Akola and Pauni respectively were displayed in the Inscription Gallery. The heavily-damaged Vakataka inscription from Hire-Borale, District Akola was in a wooden case. The Pauni inscription was likewise kept in a wooden case.

35. ARCHAEOLOGICAL MUSEUM, NALANDA.—The Bronze Gallery in the western wing of the Museum displaying all the important Nalanda Bronzes was thrown open to the public. For a comparative study, a few stone sculptures were also introduced in two show-cases.

36. NATIONAL MUSEUM, NEW DELHI.—The Gupta Gallery in the Museum was re organized. A Buddhist railing-pillar and two lintels of the classical Gupta period, recovered by the Archaeological Survey of India from the masonry of the ceiling of the tomb of Sultan Ghari, Delhi, were added to the gallery.

The collection of the Museum was further enriched by the addition of several stone and bronze sculptures including: (i) a Chaturamukha-Siva *linga* (spotted red sandstone, second century A.D., Mathura, ht. 38 cm.); a rare bronze Karttikeya **(pi. LVII B),** standing with the personified vehicle Mayura and personified Sakti (bronze, sixth century A.D., Punjab, ht. 10-8 cm.); (iii) four-armed Vishnu (bronze, south India, *circa* ninth century A.D., ht. 21-6 cm.); (iv) Somaskanda (bronze, thirteenth century A.D., south India, ht. 60 cm.); (v) Gaja-Lakshmi (basalt, eighth century A.D., Bengal, ht. 93 cm.); and (vi) Surya (white marble, twelfth century A.D., Rajasthan, ht. 96-5 cm.). The outstanding acquisition of the year, however, was the well-known Mandasore stone inscription of Yasodharman of the Malava year 589 (A.D. 532-533).

37. PATNA MUSEUM, PATNA.—A new wing, containing two galleries and an auditorium, was added to the existing building with financial assistance from the Govern ment of India. Acquisitions during the year comprised: (i) stone sculpture of Siva-Rama from the river Barakar (late medieval); (ii) stone Kushan Buddha head from Mathura; (iii) stone sculpture of *mithuna* (Chandella school) from District Rewa; (iv) twenty-five

Early Stone Age tools received from the Prehistory Branch of the Survey; (v) eight Early and Late Stone Age tools presented by the Department of Archaeology, Maharaja Sayajirao University of Baroda; (vi) four terracotta sealings, two inscribed potsherds, four pieces of pottery, two terracotta female figurines, five stone objects, two copper objects, one copper amulet with gold coating and four copper Gupta coins; (vii) six stone sculptures from Sarnath, on loan from the Survey; (viii) Kushan stone sculpture of Ekanamsa from Dcwangarh, District Gaya; (ix) Gupta black stone sculpture showing dancing poses (pi. LVIII A) on both sides and eight medieval sculptures including one of a Boddhisattva (pi. LVIII B), from Maharaman, District Gaya; and (x) a gold coin of Chandragupta II (archer-type, rare variety).

The re-organization of the Bronze and Terracotta Galleries was continued. Steps to set up a Prehistory Gallery were also undertaken.

38. ARCHAEOLOGICAL MUSEUM, UNIVERSITY OF SAUGAR, SAGAR.—Important acqui sitions to the Museum comprised: three stone sculptures of early medieval period; forty-five punch-marked and forty-two tribal coins; seven clay seals; twenty terracotta figurines; fifty beads and two plaster-casts of important pieces of Mathura art.

39. ARCHAEOLOGICAL MUSEUM, SANCHI.—The Museum was initially organized in 1919 to house the numerous movable antiquities obtained through excavations of the *stupas* and monastries on the hill-top. For re-organizing the Museum, a new building at the foot of the hill was acquired and re-modelled. The Museum has been set up therein employing modern scientific methods of display (pi. LIX B), including artificial lighting. The re-organized museum was declared open to the public on the 27th March, 1966, by the Union Minister of Education.

40. ARCHAEOLOGICAL MUSEUM, SARNATH.—The Gupta Gallery was completely re-organized by the replacement of cumbersome masonry pedestals with newly-designed brackets. Besides, the colour of the walls was also harmonized with the exhibits in the main hall, where the Sunga railing-posts were rearranged for better display. From the wall-cases and other showcases, quite a number of objects were removed to the reserve-collection to avoid congestion. Duplicate antiquities were distributed on loan to the Indian Museum, Calcutta, State Museum, Patna and State Museum, Lucknow.

41. TRICHUR MUSEUM, TRICHUR.—The display in the Museum was changed. The objects collected from the megalithic rock-cut caves were exhibited in glass show-cases with paintings to illustrate contemporary life and social customs.

42. VICTORIA HALL MUSEUM, UDAIPUR.—AS the new building inside the Palaces is to be completed very soon, the shifting of the exhibits and stores was started and about a dozen wall-cases were prepared to display the paintings.

43. BHARAT KALA BHAVAN, BANARAS HINDU UNIVERSITY, VARANASI.—A good number of antiquities, belonging to different periods, were acquired. They comprise: (i) twenty-seven terracotta human figurines belonging to the Gupta period showing traditional hair styles; (ii) thirteen stone sculptures, including a *linga,* head of Govardhanadhari Krishna, Admatha m sitting posture, and Buddha-head in black stone; (iii) eleven coins, both gold and silver, including two silver punch-marked coins, two gold coins of Huvishka, and coins

of Sher Shah, Akbar and Akbar II; and nine metal objects including eight copper bangles and an image of Mahishasuramardini and Darpana-Gauri.

44. ARCHAEOLOGICAL MUSEUM, VELHA GOA.—Fourteen sculptures and sixty-three architectural pieces were acquired during the year under review. Amongst them, special mention may be made of: (i) two beautiful Uma-mahesvara figures, found by the Director General of Archaeology in India and brought to the Museum; (ii) a hero-stone, found by an Exploration Assistant of the South-western Circle of the Survey; (iii) a beautiful piece of *Chaturmukha-linga,* presented by the President of the Nagarik Committee of Virnora; and (iv) a hero stone, presented by Dr. V. T. Gune, Director of Historical Archives, Government of Goa.

Samples of the old paintings were sent to the Archaeological Chemist, Dehra Dun, for analytical study.

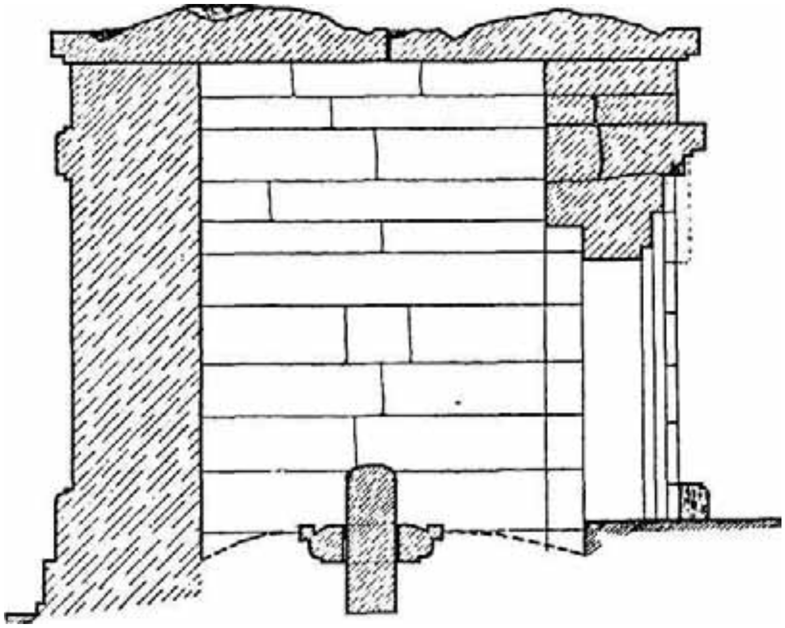
VII. ARCHITECTURAL SURVEY OF TEMPLES

1. NORTHERN REGION.—The Northern Region of the Temple Survey Project of the Survey, under Shrimati D. Mitra, undertook a survey of temples of the Kalinga Order. Detailed field-notes with regard to architecture, related sculpture and iconography of images of most of the early tempJesipf.Bhubaneswar were drawn. While the photographic documentation of theselemples was'compkte^^Ke~drawings are yet to be prepared.

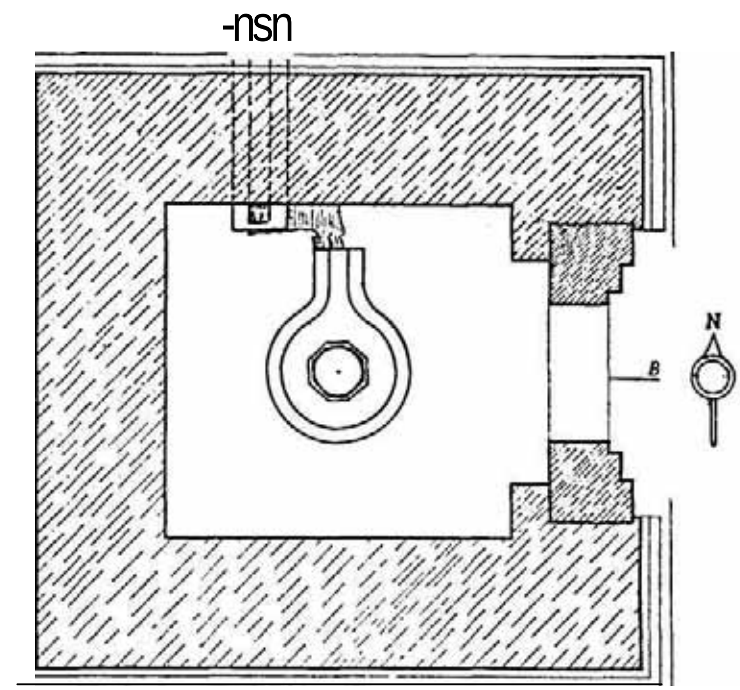
In order to trace the genesis of this particular Order, a detailed study was made not only of the well-known Gupta temples at Bhurnara, Deogarh, Eran, Nachna, Sakhor, San-" chi, Tigowa and Udayagiri, but also of a recenHy-discoveredtemple at Kunda(pl. LX A"), DistnctjAbalpur. The examination of the Siva temple at Bhurnara. which strikingly rcsem-BlestHe~ruined_Sivra, temple aUSakhor, District^ Damoh, in respect of the plan, mouldings of the platform and the sanctum and decorative carvings of the door-jambs, reveals certain facts which go against R. D. Banerji's theory which is upheld by other scholars. R. D. Banerji noticed a strong affinity in plan between this temple and the Parvati temple of Nachna and accordingly felt that there was a masonry chamber enclosing the sanctum of Bhumarajike thatpfthe Paiyati temple, though the facing of the platform had been reduced to~tlie~rnoul3ed~plinth. "While in the Nachna temple there is a distinct recess in the walls of the sanctum which received one of the ends of the roof-slabs of the ambulatory, in the Bhumara one, which has not yet been subjected to conservation, the walls of the sanctum above the plinth and below the projecting roof-slabs, with moulded edges, are straight without any recess. Neither the roof-slabs (pi. LX B) nor the walls betray the slightest traces of a roofed passage round it. Further, unlike the sanctum of the Parvati temple, the Siva temple presents three mouldings in the plinth. Evidently the exterior walls were intended to be seen from outside. From the available evidence it appears that no covered ambulatory was built over the platform which itself served as an open ambulatory round the sanctum. Incidentally, it may be recalled that the sanctum of the Nachna temple is lighted by two perforated windows absent in the Bhumara temple. Around the Siva temple are scattered a large number of semi-circular stones which have several facets on the curved part. The lower portion, to a height of 2-5 cm., of these stones recedes from the remaining part by 4-5 cm., on either side. They appear to be coping-stones, and it is tempting to link them with the platform of the Siva temple. Indeed, one of the pieces, which is a corner stone with two turnings at right angles, would, from its measurements, fit well with one of the two corners at the receding part of the platform.

The single-celled and unpretentious shrine (pi. LXI), locally known as Sankar-madha (fig. 7), of Kunda affords sufficient details of constructional features. The walls, with the exception of the topmost course, are faced inside and outside with stretcher courses, the narrow gaps between the two facings being filled with rubbles of small dimensions. The only bonding for the inner and outer facings is provided by the topmost course which consists of slabs, each covering the entire thickness of the wall. A similar arrangement in three of the walls is observed at Bhumara as well. At Sakhor a slight improvement in bonding was effected by the introduction of a few sporadic courses, the stones of which cover the thickness of the walls. The flat roof of Sankar-madha, which is made of two massive slabs, placed side by side, provides effective channels and spouts for drainage of rain-water (pi. LX B).

For purposes of comparative study, many temples of Madhya Pradesh, including those of Sirpur and Rajim, were surveyed.



SECTIONON AB



PLAN

SANKAR" MADHA *(DISTRICT fABALPOR)*

FIG. 7

2. SOUTHERN REGION.—The Southern Region of the Temple Survey Project, under Shri_K. V. SoundaraJRajan, continued the detailed study of the.cave-tcmplcs and early structural temples of the Cnalukyas and their contemporary and successive dynasties in the Deccan and rock-cut and structural temples of Tamil jNadu coeval with and slightly later thanthe ChalukyanTMbre than a hundred temples were~cx*amincd up to the end of December 1965. Thereafter, further field-work was suspended owing to the preparation of the report on the Chalukyan cave temples, which is nearing completion. The survey yielded fresh and hitherto unknown features of temples of the early period, both in the Chalukyan country and further south.

Among the outstanding studies made during the survey may be mentioned the Parvati _t£mple at Sandur, Distric^JBellary, thejcave^rnpleiat Arvalem (Goa), Visvcsvaragudi _anB"Melgudi""at Hallur (District Bijapur), Panduleni cave at MahurjT3istrict Nander),. AivaHovil at Kodumbalur (DistricT Tiruchchirappalli) and the group of temples at TJkirankottai (District Tirunelveli).

At S_andur_was.found an important Chalukyan temple (pi. LXII A), probably pertaining to the early part of the eighth century A.D. It presents interesting architectural information like an essentially southern type of *vimana*, to which is added a *maha-nasika* of considerable size — in fact equal to width of the *garbha-griha* — and thus forming the *sama* type *of maha-nasika* classification according to the texts. The sculptures, located within the niches of the cardinal directions and on the facade are in the best early Chalukyan tradition. The shrine might have been originally dedicated to Siva but has been converted in medieval times as a temple for Parvati.

^At Arvalem was found a triple rock-cut shrine (pi. LXII B) which must have been a very important cult-centre. It has three varieties of *lingas*, all of which are of the detachable type fixed into the monolithic *pitha.* While the central shrine has a normal nodular *linga,* solar disc and spear-head are cut out of the shafts of the *lingas* in the adjoining shrines; this suggests a Siva-Karttikeya-Surya nexus and makes them the only ones of this kind in India known so far. A label-inscription on one of the *lingas* indicates a late sixth-century dating. It was apparently the creation of the Kadambas of Banavasi, who were overrun in this area of Goa by the early Chalukyas during the time of Kirtivarman, the father of Pulakesin II. It is thus approximately as old as the cave-temples at Badami, unique in its own account, and evidently a local style of plain architecture conditioned by the poor lateritic rock that alone is available here.

Another interesting group of Chalukyan shrines was idejijifij£d_j^JHallur_^of which Melgudi (pi. LXIII A) is verily a copy, in name, location and approximate age, of the corresponding JVleguti (Melgudi) temple^at Aiholi, after which is it undoubtedly was conceived. It is"also Jaina in dedication. ItTs located on a low hillock outside the village. The other temple, .Visvesvaragudi (pi. LXIII B), inside the village is an interesting devolution of the early Chalukyan style and by its typical plinth-mouldings would appear to be a Chalukya-Rashtrakuta transitional temple, perhaps of the middle of the eighth century A.D.

To the Chalukyan cave-group would again belong the interesting rock-cut shrine at Mahur, locally called thejfonduleni. cave (pi. LXIV A), which shows a shrine-cell that could be circumambulated7 vestiges of *linga* and *pitha* that recall the typical Chalukyan examples, massive *dvara-palas* characteristic in their stance and attendant figures, and front corridors whose outermost row of pillars is carved with sculptures that would show an advanced stage of similar carvings on all the brackets of the Ramesvara cave at Ellora. The parapet, however, is not available here. Integral with the main cave are two side shrines, dedicated to j3anesa and Durga respectively.

The Aivarkvoil shrine is reduced to its plinth (pi. LXIV B). In its original condition it would have been almost similar to the ^Sun^axa^aradaraja^p^rujiiaL_ternple at ^Uttiramcrur, datable to the reign of Dantivarman towards thecTose of the ninth century. The extent of Pallava architectural influence would thus be evident, and, on the above basis, Aivarkovil might have perhaps been the oldest at Kodumbalur.

Further south, the very important, but unfortunately fragmentary architectural, vestiges at Ukkirankottai (pi. LXV)—famous anciently as Karavandapura of the early Pandyan "Inscriptions frprnTirupparankunram. and Anamalai—fully bear out the thesis that the early stone structural architecture of south Tamil Nadu in the second half of _the ninth century was largely the initiative of the Pandyan kings and was spread over many centres like Ukkirankottai, the most northerly group being in the Pudukkottai area in the small stone stmcturaLjteinpies_at._Enadi>. Panangudi, KaHyapgattii^etc. Architecturally, sculpturally and epigraphically, the Ukkirankottarcenlre of the early Pandyan structural architecture, with the typical square *sikharas* having highly-flanged edges, the simple architectural form of the *vimana* where clarity is the main element, the stela of sculptures which are fixed in the niches, among which *sapta-matrikas*, Jyeshtha etc., are the most popular, would all reinforce this and form a fitting sequel to the outstanding monolithic temples of the Pandyas at Kalugumalai, and would thus anticipate the early architectural enterprises in stone medium.

A hitherto-undocumented JPandyan rock-cut cave, originally noticed briefly in the JTirunelyeliJJazetteer, at.Padinalampe.r,wnot far from Gangaikondan railway-station, was examined and was found to comprise a shrine-cell with a monolithic *linga*, badly damaged inside and with external niches on the front wall flanking the entrance, wherein Ganesa and Jyeshtha are carved. Another partially scooped cave near by displays an excavation-technique recalling that of the Pallavas, apparently as learnt by the Pandyas subsequently, although the Pandyan technique basically differs from that of the Pallavas.

Among the very important sculptures that were discovered during this survey may be mentioned a truly Pallava standing Vishnu in the typical friable red sandstone material, provided later with a plastered skin and painted also, at the Vedapurisvara temple at Gheyyar. The sculpture, which is in the round, is placed in the *prakara* and stylistically would probably pertain to the first half of ninth century A.D.

Equally interesting is the sculpture of Siva as Jvaraharesvara from Ukkirankottai. Probably of the late ninth or tenth century A.D., it has three heads, three hands and three legs, one of the legs in the dancing pose.

The study reveals considerable ramifications of the Chalukyan style, making them divisible into the main and the provincial categories and displaying variant iconographic features, where the local impact is strong. In structural architecture, the Chalukyan elements continue to be popular from coast to coast down to the Guntur-Guddapah area in the south, though displaying a few variable local features.

VIII. EXPEDITIONS OUTSIDE INDIA[1]

AFGHANISTAN

EPIGRAPHY

1. ASOKAN INSCRIPTION, KANDAHAR.—The sandstone slab containing the inscription found in the ruins of Old Kandahar in front of a small mosque and presented to the Afghan National Museum in Kabul by a German physician is the most important epigraphical discovery for the year. It is in Greek language and script and contains a version of the greater part of the Twelfth and the beginning of the Thirteenth Rock-edicts of Asoka and is a free adaption of the text. Written in correct Greek, the record uses technical terms from the contemporary Greek philosophical and political works.

This is the second Asokan inscription discovered at Kandahar. The stone is obviously broken at both the ends as the beginning and end are abrupt in the middle of sentences. From its chiselled shape and dimensions, the slab appears to have been dressed for being built into some kind of" structure which must have existed in Old Kandahar, but the nature of which we have no means of knowing.

PRESERVATION OF MONUMENTS

2. ROCK-GUT STATUES AND MURAL PAINTINGS, BAMIYAN.—Following an offer from the Government of India to the Royal Afghan Government to help them in preserving the two colossal rock-cut Buddha statues and paintings at Bamiyan and on recommendation by the Director General of Archaeology in India, Dr. B. B. Lai, Archaeological Chemist in India, and Shri R. Sengupta, Archaeological Engineer, were deputed to prepare a scheme for their preservation. After visiting the site, the team brought with it a large number of specimens of rocks, plaster, pigments of colour, etc., which were subjected to petro chemical investigations with a view to determining the causes of weathering. On the basis of the results thus obtained, a report recommending measures of preservation to be taken was prepared and submitted to the Government of India.

NEPAL ARCHAEOLOGICAL

CHEMISTRY

3. MURAL PAINTINGS, BHAKTAPUR.—Under the Aid-Nepal programme, the seventeenth-century mural paintings in the palace at Bhaktapur, about 12 km. from Katmandu, were chemically treated and preserved. The paintings, covering an area of about 75 m., are executed on a carefully-prepared ground of both clay and lime. The colours used are red, yellow, blue, green, white, black and mixtures of these colours in various shades. On examination, these paintings were found to be in the grips of active decay on account of extensive flaking of pigments and damage to painted plaster.

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information from Professor Beneveniste and Daniel Schlumberger, Universite de Strasbourg, Institut d' Historie de la Civilization de Byzance, et de 1' Orient Meditterranean Strasbourg, France.

Since the colours were softened by water on account of the water-soluble medium used in these paintings, organic solvents, reagents and detergents were employed for their chemical cleaning. Acetone, methyl and ethyl alcohols, amyl acetate, normal butyl alcohol, isobutyl alcohol and ccllosolve were used as mixtures in different proportions. Highly alkaline and acidic solutions were avoided, but alcoholic ammonia was used for the elimination of smoky accretions. A mixture of triethamolamine and alcohol was used as an emulsifying agent for the elimination of greasy and sooty deposits from the painted surface. For the preservation of chemically-treated paintings, thin solutions of poly-vinyl acetate in organic solvents were employed. Extensive filleting was also carried out to the broken edges of painted plaster with a view to securing it to the ground. Holes and cavities in the plaster-surface were suitably filled. As a result of the elaborate chemical treatment, the condition of the paintings improved substantially and they were assured of a fresh lease of life.

The paintings were carefully documented by the preparation of outline drawings, black-and-white photographs and colour-transparencies.

In the course of the work, two trainees of the Department of Archaeology, His Majesty's Government of Nepal were given practical training in the chemical preservation and conservation of mural paintings.

IX. PRESERVATION OF MONUMENTS

MONUMENTS OF NATIONAL IMPORTANCE

CENTRAL CIRCLE

Madhya Pradesh

1. TEMPLE OF KOTESVARA, KASHITOLA, DISTRICT BALAGHAT.—Besides levelling the precincts, the doors of the temple were repaired and painted.

2. OLD FORT, LANJI, DISTRICT BALAGHAT.—The debris lying inside the fort was cleared and suitable pathways were laid.

3. GROUP OF MONUMENTS, MANDU, DISTRICT DHAR.—In addition to extensive jungle-clearance at the monuments, the exposed wall-tops were made watertight and the approach-roads reconditioned. Fresh concrete was laid on the floors of the Jahaz-Mahal.

4. BIBI SAHIB'S MASJID, BURHANPUR, DISTRICT EAST NIMAR.—The tank inside the compound was filled up to check seepage of water through the crevices.

5. PALACES, FORT, BURHANPUR, DISTRICT EAST NIMAR.—Underpinning of the over hanging portions of the masonry and pointing of the open joints were carried out at the ruined palaces.

6. TOMB OF SHAH SHUJA, BURHANPUR, DISTRICT EAST NIMAR.—An apron was provi ded around the platform and the deteriorated plaster renewed.

7. KHUNI-DARWAZA, CHANDERI, DISTRICT GUNA.—The bulged facade was dismantled and the work of rebuilding was taken up (pi. LXVI A and B).

8. ADAMGARH ROCK-PAINTINGS, KALAMARI, DISTRICT HOSHANGABAD.—The pathways leading to the rock-shelters were reconditioned.

9. VISHNU-VARAHA TEMPLES, BILAHARI, DISTRICT JABALPUR.—Besides the clearance of extensive jungle-growth, a pathway was laid around the monument.

10. FORT, RAISEN.—The cells inside the Rani-Mahal were exposed by the clearance of the accumulated debris.

11. BUDDHIST MONUMENTS, SANCHI, DISTRICT RAISEN.—General repairs like spreading of murum over pathways, painting of iron work and making the exposed tops of structures watertight were undertaken.

12. FORT, GARHPAHRA, DISTRICT SAGAR.—The deteriorated layer of concrete in

the Shish-Mahal and the palace was renewed, the dilapidated compound-wall rebuilt and wide joints in the steps to the monument were suitably pointed.

13. KHAMBABA, BESNAGAR, DISTRICT VIDISHA.—A mud-embankment was built on the three sides of the quadrangle to check flow of water from the adjoining fields.

14. ATHKHAMBA, GYARASPUR, DISTRICT VIDISHA.—A retaining-wall was built in order to check erosion of the soil of the compound by the adjoining nullah.

15. ROCK-CUT CAVES, UDAIGIRI, DISTRICT VIDISHA.—The pathways were reconditioned by jungle-clearance and filling up of depressions.

16. BIJAMANDAL MOSQUE, VIDISHA.—The deteriorated roof concrete of the prayer-hall was replaced with a layer of fresh concrete.

17. NILKANTHESVARA TEMPLE, UN, DISTRICT WEST NIMAR.—The dilapidated steps were reconditioned and ironworks painted.

Maharashtra

18. FORT, DONGARTAL, DISTRICT NAGPUR.—The monument was cleared of debris and vegetation.

19. REMAINS OF OLD SHRINE, RAMTEK, DISTRICT NAGPUR.—The approaches to the monument were reconditioned and the damaged positions of the retaining-wall around the platform rebuilt.

EASTERN CIRCLE

Assam

20. BARADOL, BISWANATHGHAT, DISTRICT DARRANG.—Clearance of jungle, repairs to the pinnacles and cornices in brick-work as well as replastering of a side wall of the temple were carried out.

21. GHANASYAM'S HOUSE, JAYSAGAR, DISTRICT SIBSAGAR.—The compound was dressed, a portion of the damaged compound-wall rebuilt and a barbed wire fencing erected around the area.

22. KARENGHAR PALACE, JAYSAGAR, DISTRICT SIBSAGAR.—Repairs to the damaged roof of the Prasutighar was in progress *(1964-65,* p. 86). The eaves of the roof and gable-ends as well as the tops of the side-walls were consolidated and all trees and other vegetal growths removed.

23. CANNON, SIBSAGAR COURT, DISTRICT SIBSAGAR.—All the eight cannons were placed on a raised platform and provided with a wrought-iron grill-fence.

Orissa

24. VARAHI TEMPLE, CHAURASI, DISTRICT PURL—Pointing of the open joints of **the** outer walls and re-setting of the plinth stones were taken up and kept in progress.

25. CHITRAKARINI TEMPLE, BHUBANESWAR, DISTRICT PURL—The rubbish and ddbris accumulated on the western side of the temple were removed to secure a uniform level of the compound.

26. LINGARAJA TEMPLE, BHUBANESWAR, DISTRICT PURL—The open joints on the walls of minor shrines were plugged and grouted. The work is in progress.

27. MEGHESVARA TEMPLE, BHUBANESWAR, DISTRICT PURL—The pitted and disin tegrated stones of the floor were replaced and the flooring was re-laid on a concrete-bed.

28. JAINA REMAINS, UDAYAGIRI, DISTRICT PURL—The apsidal temple on the top of the Hathigumpha on the Udayagiri hill was taken up for repairs.

29. ASOKAN ROCK-EDICT, JAUGADA, DISTRICT GANJAM.—The broken glass-panes of the skylight of the shed were replaced and the open joints in the masonry were filled in to check leakage of rain-water.

West Bengal

30. SIDDHESVARA TEMPLE, BAHULARA, DISTRICT BANKURA.—The compound was levelled, rank vegetation on the monument cleared and cracks in the superstructure walls were filled up.

31. GROUP OF TEMPLES, VISHNUPUR, DISTRICT BANKURA.—The temple known as Kalachand was provided with a 3-m. wide road and a pucca drain to carry away storm-water. The compound-wall was brought to a uniform height. The Syamarai temple was provided with a 1 J-m. wide brick-paved pathway and an iron gate on the door. All salt-affected and worn-out bricks were replaced with new ones. The Lalji temple was repaired by way of pointing of the open joints on the outer facade. The top of *bhogasala* was rendered watertight with bricks of special size set in mortar. The parapet of the Radha-syama temple was plastered and the damaged laterite *sikkara* repaired.

32. JAYADEVA TEMPLE, KENDULI, DISTRICT BIRBHUM.—The plinth of the temple was provided with a cement-concrete foundation and the flooring of the elevated platform around it renewed.

33. GROUP OF TEMPLES, KALNA, DISTRICT BURDWAN.—The missing portions of the roof-concrete of the Nava-Kailasa temple were replaced with fresh concrete. Besides general clearance of vegetation, the Krishnachandraji's temple was cleared of all debris.

34. MOSQUE, PANDU, DISTRICT HOOGHLY.—The tilted stone pillars were set right and the exposed top of walls made watertight.

35. TOMB AND MOSQUE, SATGAON, DISTRICT HOOGHLY.—The work of laying a layer of fresh lime-concrete in place of a decayed one was taken up.

36. BAISGAZI WALL, GOUR, DISTRICT MALDA.—Repairs to the damaged portions of the brick wall were kept in progress.

37. BARADUARI MOSQUE, GOUR, DISTRICT MALDA.—The missing portion of the lime-concrete flooring of the mosque were renewed and the iron posts and gates were painted.

38. CHIKA MOSQUE, GOUR, DISTRICT MALDA.—The disintegrated and salt-affected bricks were replaced by new ones.

39. DAKHIL-DARWAZA, GOUR, DISTRICT MALDA.—The disintegrated ornamental brickwork of the south-east bastion was renewed.

40. GUNAMANT MOSQUE, GOUR, DISTRICT MALDA.—The exposed top of the wall was rendered watertight.

41. LOTON MOSQUE, GOUR, DISTRICT MALDA.—The damaged ornamental brickwork at the south-east bastion was replaced with new bricks.

42. ADINA MOSQUE, PANDUA, DISTRICT MALDA.—The work of renewing the damaged lime-concrete flooring was completed.

43. TOMB AND MOSQUE OF ALIVARDI KHAN AND SIRAJU'D-DAULA, KHOSHBAGH, DISTRICT MURSHIDABAD.—The damaged boundary-wall was repaired and its coping renewed. The flooring of the monument was re-laid with a layer of fresh concrete after the removal of the damaged one and a new door was provided to the enclosure of the tomb.

44. KHANA-MIHIRER DHIPI, BERACHAMPA, DISTRICT 24 PARGANAS.—The excavated walls of the main shrine on the south-west and east sides were rebuilt and made watertight along with that on the north-west corner.

45. JATAR DEUL, JATA, DISTRICT 24 PARGANAS.—The growth of vegetation on the top of the temple was cleared and damages made good. The salt-affected and damaged bricks on the facade were replaced with new bricks in accordance with the original.

FRONTIER CIRCLE

Jamtnu and Kashmir

46. BUDDHIST MONUMENTS, HARWAN, DISTRICT SRINAGAR.—A huge drain was constructed at the back of the structural remains of the *stupa* to divert the waters flowing down the hill. The wooden shed for the protection of terracotta tiles was repaired.

47. GROUP OF TEMPLES, BABOR, DISTRICT UDHAMPUR.—Two of the temples were repaired by the resetting of bulging portions and restoration of the missing stones in the masonry.

48. GROUP OF TEMPLES, KIRAMCHI, DISTRICT UDHAMPUR.—The buried platform on which the temples are built was exposed and the courtyard levelled up.

MID-EASTERN CIRCLE

Bihar

49. EXCAVATED REMAINS, ANTICHAK, DISTRICT BHAGALPUR.—The exposed terracotta plaques fixed on the main temple which had been recently exposed by excavation were provided with a temporary shed of corrugated iron sheets to protect them from deterioration.

50. NAGARJUNI CAVES, BARABAR, DISTRICT GAYA.—Approach road to the monument was levelled and dressed. Cracks on the top of the caves were grouted and filled up to stop seepage of rain-water.

51. BUDDHIST STUPA, CHAK-RAMDAS, DISTRICT MUZAFFARPUR.—The old and decayed shed over the excavated *stupa* was brought down and a new shed over wooden posts was erected.

52. ASOKAN PILLAR, KOLHUA, DISTRICT MUZAFFARPUR.—The area around the Asokan pillar and the Markata-hrada was fenced with barbed wire to avoid misuse and encroach ment of the area by the local people and to lay out a small garden.

53. EXCAVATED REMAINS, KUMRAHAR, DISTRICT PATNA.—Besides keeping the whole site free from vegetation, debris accumulated on the southern corner of the Mauryan hall was removed and the area properly levelled and dressed.

54. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—Growth of vegetation was cleared from the walls and compounds of the monasteries and temples. Barbed-wire fencing around the acquired land at Nalanda was completed. The overhanging portion of the south-eastern wall near the entrance-gate was underpinned.

55. BAKHTIAR KHAN'S TOMB, CHAINPUR, DISTRICT SHAHABAD.—Cracks in the leaking domes were filled in by grouting with liquid cement-mortar.

56. MUNDESVARI TEMPLE, RAMGARH, DISTRICT SHAHABAD.—Leakage through the *sikhara* of the temple was stopped by grouting with liquid cement-mortar and the stepped approach-path to the temple repaired.

57. HASSAN SHAH SUR'S TOMB, SASARAM, DISTRICT SHAHABAD.—Leakage through the main dome was stopped by grouting liquid cement-mortar. The barbed-wire fencing around the tomb was repaired, iron-works painted and brick-edging provided on either side of the approach-road.

58. SHER SHAH'S TOMB, SASARAM, DISTRICT SHAHABAD.—The approach-path to the monument was provided with lime-concrete, the barbed-wire fencing near the main entrance to the monument was repaired and the iron grills, fencing-posts, gates etc., were painted.

Uttar Pradesh

59. TOMB OF DAULAT, MEHNAGAR, DISTRICT AZAMGARH.—Expanded-metal shutters were provided to the door and the barbed-wire fencing was repaired.

60. NIRVANA STUPA, KUSINAGARA, DISTRICT DEORIA.—The work of making the *stupa* watertight taken up earlier *(1964-65,* p. 89) was completed. The top portion of the *stupa* was also treated in the same manner.

61. LORD CORNWALLIS' TOMB, GHAZIPUR, DISTRICT GHAZIPUR.—The approach-roads were made good by consolidated *kankar* and the leakage through the dome stopped by grouting with liquid cement-mortar.

62. HAMMAM, FORT, JAUNPUR, DISTRICT JAUNPUR.—Expanded metal shutters were provided to the door-opening to stop entry of bats. Barbed-wire fencing around the monument was repaired.

63. JHANJHARI-MASJID, JAUNPUR, DISTRICT JAUNPUR.—The layer of dead lime-concrete over the roof-terrace was removed and a layer of new lime-concrete provided to make the roof watertight. The barbed-wire fencing was repaired and iron-works were painted.

64. ASOKAN ROCK-EDICT, AHRAURA, DISTRICT MIRZAPUR.—The work of providing a shed of rubble masonry over the rock started earlier *(1964-65,* p. 89) was completed.

65. EXCAVATED REMAINS, SARNATH, DISTRICT VARANASI.—The top portion of the Dhamekh *stupa* was made watertight by special type of bricks in mortar after taking out the roots of trees, plants, etc. The work was kept in progress. Approach-roads were also maintained properly.

NORTHERN CIRCLE

Madhya Pradesh

66. GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—Portions,of the dead lime-concrete on the plinth-surface of several temples were removed and fresh lime-concrete laid. The sunken portion of the floor on the south-eastern corner of the Lakshmana temple was raised to its original level. The newly-acquired land to the west of the Kandariya-Mahadeva temple was fenced off with barbed wire.

67. PARVATI TEMPLE, NACHNA, DISTRICT PANNA.—A portion of the plinth, which had bulged due to the ingress of moisture into its core, was dismantled and reset. A modern *mandapa,* which concealed the richly-ornamented entrance door, was dismantled and the carvings on the door jamb and lintel exposed to view. Cracks in the ceiling were filled up by grouting. The flooring of the *pradakshina-patha* around the cella was re-laid with fresh concrete. A 2£-m. wide stone-paved apron was provided around the temple to facilitate easy drainage of water. The land around the temple was levelled, dressed and enclosed within a barbed-wire fencing.

68. GROUP OF TEMPLES, AMARKANTAK, DISTRICT SHAHDOL.—All vegetation growth on and around the temples was removed, damaged patches in the floor filled up with lime-cement concrete, dislodged stones reset and open joints pointed and rendered watertight.

Rajasthan

69. PALACES, DIG, DISTRICT BHARATPUR.—A stone beam in the Rani-Mahal of the Gopal-Bhawan, which had cracked and sagged, was strengthened and raised to its original position. The doors were painted.

70. USHA-MANDIR, BAYANA, DISTRICT BHARATPUR.—The raised level of the fore court of the temple was lowered and the low rain-water drain raised to the level of the road for easy drainage.

Uttar Pradesh

71. CHINI-KA-RAUZA, AGRA.—The damaged portions of the outer face of the north western *chhattri* were underpinned with *lakhauri* bricks and concreted mortar.

72. FATEHPURI MOSQUE, AGRA.—The dead and decayed mortar from the floor of the verandah and rooms was removed and a layer of fresh lime-concrete laid. The openings were provided with wooden doors of Mughal pattern.

73. FIRUZ KHAN'S TOMB, AGRA.—The damaged portions of the walls and ceiling were repaired.

74. RAM-BAGH, AGRA.—The dead lime-plaster on the walls of the main entrance-gate and its side-rooms was removed and the exposed surface replastered with suitable mortar. The wooden shutters of the gate and windows were repainted.

75. TAJ MAHAL, AGRA.—The sunken portions of the redsandstone pavement in front of the Mihman-Khana and causeways were raised to the original level by providing a a concrete bedding. A cement-concrete drain was provided around the forecourt of the Taj Mahal, and a 5-cm. thick sandstone edging was provided by the side of the drain; the approach-road was also provided with edging. The western gate was provided with new wooden doors of Mughal pattern, while the existing doors of the eastern gate were repaired and refixed. Some other cells opening into the courtyard were also provided with Mughal-pattern doors. The damaged portion of the wall of the Khan-i-Alam on the river side were underpinned and the open joints of the brickwork pointed with mortar. The work was kept in progress.

76. GROUP OF MONUMENTS, FATEHPUR-SIKRI, DISTRICT AGRA.—The wide joints in the *chhajja^* stones and brackets of Shaikh Salim Chishti's tomb were filled up and rendered watertight with a special lime mortar. The open joints in the pavements near the Buland and Badshahi Darwazas were also pointed. The floor near the Pigeon House was relaid with a layer of fresh lime concrete. The collapsed portion of the city wall south of the Agra Gate was reconstructed, the deep and wide cracks on the top of the wall were filled up and the top was finished to match with the old surface. The work was kept in progress.

77. SARAI, JAJAU, DISTRICT AGRA.—The growth of vegetation on the gateways of the *sarai* and the domes of the mosque was removed, and the voids in the brickwork of the gate ways were filled with bricks in concreted mortar.

78. AKBAR'S TOMB, SIKANDARA, AGRA.—The decayed base stones of the pillars of the arches on the exterior side of the *dalans* were replaced with new ones matching with the original ones. Wooden doors of Mughal pattern were fixed to the staircase openings in the false gateways on the east and west of the compound-walls. The wooden railings and doors of the second storey of the mausoleum were painted to match with the red sands tone.

79. MARIAM'S TOMB, SIKANDARA, AGRA.—The dead and decayed plaster was removed from the walls and ceilings of the *dalans* and the exposed surfaces plastered afresh.

80. GARDENER'S CEMETERY, CHHAONI, KASGANJ, DISTRICT ETAH.—Wild vegetation growing around the cemetery was uprooted and the missing marble stones on the platform were replaced with new ones.

81. JAMI'-MASJID, ETAWAH.—The dead and decayed plaster of the western walls as well as from the walls of the tank in front of the mosque was removed and the exposed surfaces covered with a layer of fresh plaster. Fresh lime-concrete was laid on the roof on the north side after the removal of the old concrete and replacing the broken beam over the pillars. New Mughal-pattern doors were provided in place of the old, decayed and missing ones. Wide and deep cracks in the dome, roof and floor in front of the mosque were filled up with lime-concrete and the surface finished to match with the old one. A ledge in lime-concrete was provided all round the dome and the roof on the north and south sides to prevent seepage of water.

82. MOSQUE OF MAKHDUM JAHANIAN, KANNAUJ, DISTRICT FARRUKHABAD.—The collapsed portion of the wall on the east was reconstructed with dressed Mirzapur stones matching with the old ones in texture and colour. The core of the wall was filled with rubble stone in lime-cement mortar. The old, decayed and worn-out stones on the western face were chiselled off to a depth of about 7-5 cm. and fresh stone of matching colour reset in position. The work was kept in progress.

83. JAMI'-MASJID, ERICH, DISTRICT JHANSI.—Decayed patches of plaster on the *dalans* and soffits of the domes were renewed with fresh material. Fresh lime-concrete was laid on the roof of the northern and southern *dalans.* Deep and wide cracks in the domes and the roof were filled up and the openings pointed. The damaged flooring was removed and a fresh one laid. The damaged portions of the brick enclosure-wall were underpinned.

84. RANI LAKSHMI BAI'S PALACE, JHANSI.—The entire roof was rendered watertight. In the inner courtyard, ornamental plaster-work on the walls was restored following the original pattern wherever it had been damaged. Modern colour coatings were carefully scraped off from the walls to expose the original paintings. New door-frames and shutters were fixed in the openings. The work was kept in progress.

NORTH-WESTERN CIRCLE

Delhi

85. JAMI'-MASJID, DELHI.—The worn-out red sandstone pieces of the arch on the western wall in the extreme south of the monument were replaced with new ones. Orna mental pieces of red sandstone and white marble slabs were inserted in place of the damaged ones in the arches of the main entrance and of the western wall of the mosque. The surface of the exfoliated stones in the soffits of the dome were dressed and copper dowels fixed in place of the rusted iron dowels. Other repairs included grouting and pointing of the open joints of the marble pulpit.

86. QUTB-MINAR, DELHI.—All the pits excavated around the Minar for the exami nation of the foundations by the Expert Committee {*1964-65*, p. 92) were scaled up. The open patches in the outer face of the Minar were rebuilt and an apron provided around the Minar to prevent rain-water seeping into the foundations.

87. RED FORT, DELHI.—The Peacock Throne in the Diwan-i-Khas was enclosed by a low protective railing of brass. The area to the east of the fort-wall was cleared of jungle-growth to a width of about *3\m.* and covered with murum. The fallen plaster of the walls and ceiling of the Mumtaz-Mahal was made good and its walls were colourwashed.

Himachal Pradesh

88. TEMPLE, BAIJNATH, DISTRICT KANGRA.—One of the four miniature shrines attached to the *sabha-mandapa* which had bulged out was dismantled and reset in position. The missing stones of the flagged flooring were renewed where required.

89. KATOCH PALACE, SUJANPUR-TIRA, DISTRICT KANGRA.—The damaged retaining-wall was restored in part and the monument was kept in a neat and presentable condition.

Punjab

90. BHATINDA FORT, BHATINDA.—The works of dismantling the fallen blocks of old brickwork, removal of debris, sorting out of bricks and stacking them for re-use in the restoration of the fallen walls and bastions was almost completed. The damaged brick-on-edge flooring of the main entrance-gate was reconditioned. The broken and missing parts of the gun-carriage wheels were restored and the cannon was enclosed with expanded-metal_/'fl/*'-frame as a protective measure.

91. TOMBS, NAKODAR, DISTRICT JULLUNDUR.—The decayed and salt-affected plaster over the apron and arches was replaced by a fresh coat of plaster.

92. SARAI, NURMAHAL, DISTRICT JULLUNDUR.—The overhanging masonry above the pillars was underpinned to prevent further damage to the gateway of the *sarai*.

Rajasthan

93. SHAHJAHANIMOSQJJE, AJMER.—The damaged marble stones in the central *mihrab* were removed and the masonry core repaired.

94. EXCAVATED SITE, KALIBANGAN, DISTRICT GANGANAGAR.—Sheets of alkathene were spread over the excavated remains of defence-walls, streets and brick structures for temporary protection. The excavated area was given a proper slope and provided with drains to divert rain-water.

95. HARSHAT-MATA-KA-MANDIR, ABANERI, DISTRICT JAIPUR.—The open joints of the north wall of the lowest terrace were pointed and the sunken stone flooring of the *mandapa* was raised with proper slope. The joints of the ashlar steps of the *kund* were opened and pointed with a suitable mortar and stone slabs laid with lime-concrete were provided to six upper chambers which had lost their roof. The scattered sculptures were collected and kept inside the *kd*

96. AKBAR'S MOSQUE, AMBER, DISTRICT JAIPUR.—The walls of the water-tank were plastered and patch-repairs executed to the flooring of the prayer-hall to match with the original one.

97. JAGAT SIROMANI TEMPLE, AMBER, DISTRICT JAIPUR.—The decayed stones of the plinth of the temple were replaced and repairs executed to the *grasa-thara, gaja-thara* and *asva-thara,* in accordance with original design. The open joints in the *sikhara* of the *garuda-mandapa* were pointed and the niches provided with expanded-metal *jalis.*

Uttar Pradesh

98. KALINGA MONUMENTS, KARANPUR, DEHRA DUN.—The items of work done to this monument included extension of the retaining-wall, providing a surface-drain and raising the height of the dwarf-wall in front of the gate.

99. SHAH PIR'S TOMB, MEERUT.—The breaches in the masonry of the plinth were made good with country-bricks and the joints recess-pointed. The sunken portion of the floor of the lower terrace was raised and re-laid with fresh lime-concrete. Brick pillars were put up to support the members over the pillars with disintegrated bases on the north-east and south-east corners of the pillared dome. The work was kept in progress.

SOUTH-EASTERN CIRCLE

Andhra Pradesh

100. KODANDARAMASVAMI TEMPLE, VONTIMITTA, DISTRICT CUDDAPAH.—The mud-partitions inside the Ankanala *mandapa* and the debris outside the compound of the temple and those in front of the southern *gopuram* were removed and the ancient steps brought to light. The traces of lime-plaster from the pillars of the *mukha-mandapa* were partly removed.

101. FORT, GOLKONDA, DISTRICT HYDERABAD.—The overhanging masonry over the passage under the curtain-wall between Rani-Mahal and the Zenana Guards' room was repaired. The loosely supported niche at the topmost part of the Rani-Mahal together with other fallen parts were repaired, and the exposed tops of walls flanking the steps leading to the top of the Rani-Mahal were made watertight.

102. ABDUL WAHAB KHAN'S TOMB, KURNOOL, DISTRICT KURNOOL.—The base-line of the rampart of the fort was exposed by removal of accumulated earth and silt.

103. PAPANASI GROUP OF TEMPLES, ALAMPUR, DISTRICT MAHBUBNAGAR.—Construction of a retaining-wall taken up earlier *{1964-65,* p. 94) was partly completed.

104. UMA-MAHESVARA TEMPLE, YAGANTI, DISTRICT MAHBUBNAGAR.—Leaking roof of the *mandapa* on the south and of that on the north-east corner was made watertight by a fresh layer of concrete.

SOUTHERN CIRCLE

Madras

105. KAILASANATHA TEMPLE, KANCHEEPURAM, DISTRICT CHINGLEPUT.—Under pinning of the weathered portions of the masonry of the plinth and the superstructure and rendering the surface with tinted mortar to match with the original colour was carried out. Besides, wide cracks on the walls and pointed the open joints were grouted.

106. KALYANA-MAHAL, GINGEE, DISTRICT SOUTH ARCOT.—The disintegrated plaster of the ceiling and the flooring on all the four sides were completely raked out and a suitable plaster was applied to match with the extant portions (pi. LXVII A and B).

107. VENKATARAMANA TEMPLE, GINGEE, DISTRICT SOUTH ARCOT.—The elevated ground in front of the main entrance was lowered and the edges of the surrounding higher area were stabilized by dry-stone revetment all round.

108. SIVAGANGA LITTLE FORT, THANJAVUR.—Repairs to this monument comprised strengthening of the foundations of portions of the fallen outer walls and underpinning of the overhanging portions of walls.

Mysore

109. TIPU SULTAN'S PALACE, BANGALORE.—The external weathered plaster was removed and the exposed surface was replastered after the filling up of the pockets found in the core of the brickwork. The damaged terrace (pi. LXVIII A and B) on the western balcony and the lintels over the doors were restored with new teak-wood members (pi. LXIX).The missing cusps of the wooden arches were also replaced by new ones in imitation of the original ones. Similarly, the missing sides of the minor arches were also restored.

110. TRIPURANTESWARA TEMPLE, BELGAVI, DISTRICT SHIMOGA.—For the better presentation of the temple a compound wall to a length of seventy-six metres was constructed.

SOUTH-WESTERN CIRCLE

Goa, Daman and Diu

111. CHURCH OF ST. CAITANO, VELHA GOA.—New plastering-work was taken up after the removal of loose and dead plaster on the wall.

Maharashtra

112. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—The ceiling-drain in Cave 1 which had been leaking was opened up for giving the rock a proper slope by chiselling the disintegrated portions. The work was in progress.
lisintegrated portions, lhe work was m progress.

113. ROCK-CUT CAVES, AURANGABAD.—The steps leading to the first group of caves were improved for easy climb.

114. ROCK-CUT CAVES, ELEPHANTA, DISTRICT KOLABA.—The work of replacing the masonry-pillars constructed in the past by those of cement-concrete and other repairs taken up earlier *(1964-65,* p. 97) were kept in progress.

115. SHANWARWADA, POONA.—Repairs to the western fortification-wall, heavily damaged by the floods during 1961, were taken up and kept in progress.

WESTERN CIRCLE

Gujarat

116. EXCAVATED REMAINS, LOTHAL, DISTRICT AHMADABAD.—To preserve the mud-brick platform of the 'granary' from erosion, an encasing-wall, 38 cm. thick, of mud-cement bricks was laid on a cement-concrete bed on three sides of the platform to a height of 45 cm.

The complex known as 'bead-maker's houses' was also likewise conserved with mud-cement bricks laid over and on the sides of the mud-brick walls and floors.

The 'bead-maker's kiln' was stabilized and the surface made waterproof; arrangements to cover the kiln during the rains were also made.

In the acropolis area, the mud-brick walls on either side of the drain were preserved. Encasing-wall of the platform was raised to a height of 30 cm. on the western and northern sides. The decayed bricks of the drain in the area were removed and re-laid wherever necessary.

117. TORANA, KARVAN, DISTRICT BARODA.—The decayed wooden lintel of the *torana* was removed and replaced by a new one. The hanging brickwork was re-set and the cracks of the staircase were filled up.

118. DURVASA-RISHI'S ASRAM, PINDARA, DISTRICT JAMNAGAR.—In continuation of the previous year's work *(1964-65,* p. 98), the *adhishthana* mouldings of the *garbha-griha* of Temple 4 were brought to the floor-level and re-set and the surface made watertight and pointed. In Temple 5, the out-of-plumb walls and pillars were set right, the damaged and tilted stones of the entrance were brought to their proper position and the missing portion was restored. The leaning facade of Temple 6 was put back to its original position, cavities were filled and the roof was made waterproof.

119. RANI-KA-VAV, PATNA, DISTRICT MEHSANA.—Clearance of debris was under taken in the main shaft and on the side walls to expose the buried ashlar-masonry. The dislodged stones were re-set to a length of 11 m.

120. PANGH-MAHUDA-KI-MASJID, PAVAGARH, DISTRICT PANCHMAHALS.—In continuation of last year's work *(1964-65,* p. 98), further work was carried out in the raised eastern platform surrounding the tomb and the original ashlar-wall was traced and rebuilt with stones collected from the neighbouring area.

121. NAVLAKHA TEMPLE, SEJAKPUR, DISTRICT SURENDRANAGAR.—The hanging, collapsed and dislodged members of the *garbha-griha* of the temple were carefully removed and the loose members of the *sikhara* were re-set up to the *sukanasika* portion and the surface was made watertight. Grouting of the wide cracks was also carried out on the *adhishthana*-portion of the *garbha-griha.*

Rajasthan

122. GROUP OF MONUMENTS, FORT, CHITORGARH.—Clearance of the area on the southern and western sides of the Ratnesvara tank was carried out, ashlar-wall and steps were exposed and the loose pieces were brought to original position and set along with sculptured niches.

The work of demolishing the modern structure and levelling of the area around the Tower of Victory was completed.

Re-setting of the dry-masonry wall, removal of the dead plaster on the dome of the temple on the bank of Chitrang-Mori tank and re-plastering of the exposed surface were carried out.

The overhanging walls of the shrine near the gateway of Maldas were underpinned and the top made watertight. Removal of debris and clearance of the area exposed a large residential complex.

123. GROUP OF MONUMENTS, MANDORE FORT, DISTRICT JODHPUR.—The original boundaries of the Jaina temple were exposed. A large complex of residential houses were brought to light.

The original plinth of ashlar-masonry of the Brahma temple was exposed on the western side and the disturbed stones of the pavement were re-set.

124. MAMA-DEVI TEMPLE, KUMBHALGARH, DISTRICT UDAIPUR.—Excavation was carried out to expose the original pavement in front of the temple. The work of re-setting the out-of-plumb ashlar-masonry of the compound-wall was undertaken.

MONUMENTS MAINTAINED BY STATES

GUJARAT

125. GROUP OF TEMPLES, POLO JUNGLE, DISTRICT SABARKANTHA.—Partial restoration and re-setting of original stones were carried out in Temples 1, 2 and 3.

KERALA

126. KRISHNAPURAM PALACE, KAYAMKULAM, DISTRICT ALLEPPEY.—Repairs to the ceilings and walls of the palace and construction of a new ornamental boundary-wall in harmony with the existing type of architecture of the building were carried out. The wood preservative 'CuprinoP was used on the wood-work.

MADRAS

127. PADMANABHAPURAM PALACE, THUKALAY, DISTRICT KANNIYAKUMARI.—Wooden railings were fitted on the floor inside the Mural Pagoda on the third floor to prevent visitors from tampering with the paintings. Repairs to the roof of the dining-hall were also undertaken to stop leakages.

ORISSA

128. BHARATESVARA TEMPLE, BHUBANESWAR.—Repairs to the Bharatesvara temple of the group of three ancient temples near the Ramesvara temple, taken up earlier *(1964-65,* p. 100), was continued during the year. The lower portion of the outer wall of the temple, up to a height of two metres, was renovated and its core above this height was strengthened by pointing of the open joints and filling up the cracks after setting of the stones in their proper places.

129. SATRUGHNESVARA TEMPLE, BHUBANESWAR.—The entire dilapidated structure of this ancient monument was dismantled from the top down to the ground level. The reconstruction of the lower portion of the temple up to a height of about 2 m. was finished.

130. SAHI MOSQUE, CUTTACK.—The mosque was taken up for repairs.

MAHARASHTRA

131. ROCK-CUT CAVE, BHOKARDAN, DISTRICT AURANGABAD.—To minimize damage to the caves due to the stagnation of water, the existing protection-wall was repaired.

132. KARNESVARA TEMPLE, SANGAMESHWAR, DISTRICT RATNAGIRI.—Repairs to this temple were carried out.

RAJASTHAN

The following monuments were attended to:

133. PALACES, AMBER, DISTRICT JAIPUR.

134. ZANANA-MAHAL, MANDORE, DISTRICT JODHPUR.

135. AMBIKA-MATA TEMPLE, JAGAT.

UTTAR PRADESH

136. NANDA-DEVI TEMPLE, ALMORA.—The floor of the *mandapa* was thoroughly repaired.

137. NANDA-BHAWAN, CHAURASI-KHAMBHA, DISTRICT MATHURA.—The roof of the temple, which had been in a very bad state, was reconstructed with the old materials in the proper way.

138. KARDAMESVARA-MAHADEVA TEMPLE, DISTRICT VARANASI.—The steps from the temple leading to the tank had been badly damaged and were likely to cause serious damage to the main temple. The stone blocks of the *ghat* were properly arranged and the rotten ones replaced. The plinth of the temple was also repaired by the replacement of worn-out stone pieces.

WEST BENGAL

139. NAVARATNA TEMPLE, BRAHMANDIHI, DISTRICT BIRBHUM.—The open joints of bricks were pointed and the cracks grouted at places on the exterior surface of the temple.

140. HENRY MARTIN'S PAGODA, SERAMPUR, DISTRICT HOOGHLY.—Besides clearing the debris and jungles, a protective brick wall was erected on the river-side; the works of driving piles and providing a revetment to protect the Pagoda from erosion were started.

141. BATTLE-FIELD, PLASSEY, DISTRICT NADIA.—The surface-drain around the main monument was repaired. Apart from straightening the deformed iron posts of the fencing, each dummy gun position in the field and pillars demarcating the battle-field were repaired.

X. ARCHAEOLOGICAL CHEMISTRY[1]

TREATMENT OF MONUMENTS AND PAINTINGS

ANDHRA PRADESH

1. THOUSAND-PILLARED TEMPLE, HANAMKONDA, DISTRICT WARANGAL.—The sculptures on the pillars were cleaned.

ASSAM

2. VISHNUDOL, JAYASAGAR, DISTRICT SIBSAGAR.—Cleaning of moss and lichen and fixing of loose plaster and terracotta decorations were continued {*1964-65,* p. 101). After treatment, a resinous emulsion was applied as a final preservative.

BIHAR

3. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—The moss on the stucco images in Site 3 was cleaned and exfoliation and cracks were treated.

4. SHER SHAH'S TOMB, SASARAM, DISTRICT SHAHABAD.—Wall-paintings were preserved by chemical treatment and the plaster behind was suitably fixed.

DELHI

5. RED FORT, DELHI.—Chemical cleaning of the marble-work in Moti Masjid and Bhadon pavilion was carried out. At Diwan-i-Khas, extensive experiments were carried out for evolving a method for removing accretions on the paintings.

GUJARAT

6. SIDDI SAYYID MOSQUE, AHMADABAD.—The stone-cut *jalis* containing beautiful designs of trees and other geometrical patterns, which had been covered with oil, dust, dirt, soluble salts, etc., were first cleaned with paper-pulp to remove the salts, and later with suitable organic chemicals.

HIMACHAL PRADESH

7. SITA-RAMA TEMPLE, CHAMBA, DISTRICT CHAMBA.—The surface accretion of moss, lichen, plaster and lime-wash was removed with ammonia, detergents and dilute acid. The removal of clay plaster involved pre-softening by application of a strong solution of Lissapol followed by treatment with ammonia. The relief-decorations were finally treated with fungicides and consolidated.

[1] Information from the Archaeological Chemist in India, except as noted below.

8. BRAJARAJA BIHARI TEMPLE, NURPUR, DISTRICT KANGRA.—Whitewash was removed from the mural paintings (pis. LXX and LXXI) with alcohol mixed in water. The sooty deposits on the paintings of the doorways were removed by organic chemicals.

KERALA

9. RAMA TEMPLE, TRIPRAYAR, DISTRICT TRICHUR.—The old preservative coating was removed, and the paintings were cleaned and given a fresh coating of preservative.

MADRAS

10. KAILASANATHA TEMPLE, KANCHEEPURAM, DISTRICT CHINGLEPUT.—The fragmented paintings in the small shrines all round the temple were cleaned. In the course of cleaning, a patch of paintings depicting beautiful female figures was exposed by the removal of the covering plaster. Chemical cleaning of the sculptures for removal of soluble salts and other accretions was also done.

11. DHARMARAJA-RATHA, MAHABALIPURAM, DISTRICT CHINGLEPUT.—This monument, covered with soluble salts, etc., was first treated with paper-pulp and thereafter chemically cleaned and preserved.

12. VALISVARA TEMPLE, TIRUVALISWARAM, DISTRICT TIRUNELVELI.—The inscribed slab in this temple, which had been covered with moss and lichen, was cleaned and given a preservative coating.

MADHYA PRADESH

13. KANDARIYA-MAHADEVA TEMPLE, KHAJURAHO, DISTRICT CHHATARPUR.—Soluble salts were removed by the paper-pulp method from a number of sculptures in the sanctum. Incrustation of calcium carbonate and silicate was also removed from the sculptures.

14. LAKSHMANA TEMPLE, KHAJURAHO, DISTRICT CHHATARPUR.—The growth of lichen, accumulations of soluble salts and layers of lime was removed from stone surfaces. Experiments with zinc silicofluoride as a fumigant and an emulsion of vinyl acetate for a surface-preservative were found to be effective.

15. LARGE SAS-BAHU TEMPLE, FORT, GWALIOR.—The larger of the twin temples was cleared of vegetation. Accumulation of soluble salts on the stone surfaces in some places was also removed. The work was kept in progress.

16. TELI-KA-MANDIR, FORT, GWALIOR.—The growth of moss and lichen was removed from the stone surfaces of this temple (pis. LXIIand LXIII).

17. ATHA-KHAMBA, GYARASPUR, DISTRICT VIDISHA.—Extensive growth of yellow lichen and moss was removed. Fungicidal and preservative treatment was also given and the original beauty of the carvings was brought out.

MAHARASHTRA

18. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—Filleting of loose paint-films and painted stuccos was continued. The broken image of an elephant on the right side at the bottom of the staircase leading to Cave 16 was re-moulded in symmetry with the one on the left side. Iron rods were used for strengthening the sculpture.

19. BIBI-KA-MAQBARA, AURANGABAD.—The paintings, which had been covered with limcwash, ink-marks, pencil-scribblings, etc., were removed by chemical cleaning. The work is in progress.

20. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—The elephant and the *chhatlri* in front of Cave 32 were treated with paper-pulp in order to remove soluble salts. Chemical cleaning and preservation was done. Filleting-work in Cave 33 was continued *{1964-65,* p. 103).

21. SHANWARWADA, POONA.—The paintings on the walls had streaks of limewash and had also been covered with dirt, dust etc. These were removed by applying suitable chemicals and preservative coating was given on the paintings.

MYSORE

22. ASAR-MAHAL, BIJAPUR.—The paintings were cleaned with suitable chemicals and preserved.

23. WATER-PAVILION, KUMATGI, DISTRICT BIJAPUR.—The paintings in the water-pavillion had been covered with soot, cob-webs, dust, etc. These were removed and the paintings were cleaned. The paintings have become brighter.

24. HOYASALESVARA TEMPLE, HALEBID, DISTRICT HASSAN.—The sculptures on the outer wall of the *sukanasi* were cleaned.

25. DARYA-DAULAT-BAGH, SERINGAPATAM, DISTRICT MANDYA.—The paintings on the walls of the eastern ante-chamber were taken up for chemical cleaning. Filleting of loose paint-films and painted stuccoes were also done wherever necessary.

ORISSA

26. ROCK WITH EDICTS OF ASOKA, JAUGADA, DISTRICT GANJAM.—From the point of view of chemical preservation, the rock is clearly divided into two parts, the southern, overflown with ferruginous waters, and the northern, free from iron-rust deposits but dis figured with a broken opaline layer, presumbly of a decayed coating previously used on its surface. This disfigurement was successfully removed together with moss and lichen and splashings of lime.

27. BAITAL-DEUL, BHUBANESWAR, DISTRICT PURI.—The removal of vegetation, lime-wash and soot commenced last year, made substantial progress. Lissapol and triathanola-mine emulsion were used for removal of soot.

28. BRAHMESVARA TEMPLE, BHUBANESWAR, DISTRICT PURI.—Removal of vegetation from the stone surfaces of this temple fairly progressed over last year's work.

29. PARASURAMESVARA TEMPLE, BHUBANESWAR, DISTRICT PURI.—The chemical treatment of this temple was almost completed. Ferruginous stains somewhat responded to the treatment of trichloracetic acid and a hydrosulphite.

30. SUN TEMPLE, KONARAK, DISTRICT PURI.—The growth of moss and lichen and salt deposited on the stone surfaces were removed from the top 13 m. of the pyramidal tower and a fungicidal was applied to the treated surface. The work was kept in progress.

31. ROCK-CUT CAVES, UDAYAGIRI, DISTRICT PURI.—Accumulations of soluble salts and growth of moss and lichen were removed from a number of sculptures.

PUNJAB

32. TOMB OF PUPIL MUSICIAN, NAKODAR, DISTRICT JULLUNDUR.—The removal of moss from the multi-coloured inlay-work and wall-paintings was started on the exterior. Experiments are being carried out for the extrication of moss which had penetrated the painting. Ammonia, normally used for softening the hardened moss, was found to affect the paintings.

RAJASTHAN

33. ALA-KABRA'S HOUSE, CHITORGARH.—The staircase area in Ala-Kabra's house was cleaned and preserved.

UTTAR PRADESH

34. CHINI-KA-RAUZA, AGRA.—The removal of accumulations of soot, dust, bird droppings, old coating of varnish and insect-nests from the paintings was completed. The broken edges of plaster were filletted and cracks on the plastered surface were filled in. The painted surface was consolidated with a vinyl acetate preservative solution.

35. ZANANA PALACE, FORT, ALLAHABAD.—The mural paintings, executed on a thin ground prepared directly on the stone surface in the galleries, verandahs and rooms, were found covered with different sorts of accretions comprising dust, cobwebs, insect nests, smoke, grease, etc. They were taken up for cleaning and the work proceeded satisfactorily.

36. TOMB OF AMIR KHUSRAU, ALLAHABAD.—The paintings chemically cleaned previously, had fresh accretion of dust, cobwebs and insect-nests. New cracks were filled in and loose painted plaster was consolidated. The work was continued.

37. MATHAKUAR TEMPLE, KUSINAGAR, DISTRICT DEORIA.—Due to stagnation of water around the sculpture of the seated Buddha, repeated growth of moss over the stone surface had posed a problem. A concentrated fungicidal was applied to retain its efficacy over a longer period.

38. ASNI PILLAR, FATEHPUR.—A small pillar and some loose sculptures collected round it, in the court of the Municipal Office, were given chemical treatment for the removal of vegetation and coatings of vermilion.

39. INSCRIBED PILLAR, FORT, JAUNPUR.—The inscribed half of the pillar had been previously cleaned of vegetation and flaking parts strengthened and cracks filled in with concentrated resin-solution. The uninscribed part was treated this year.

40. BRICK TEMPLE, BHITARGAON, DISTRICT KANPUR.—The fresh growth of lichen on some parts of the temple was eliminated. Cleaning operation was followed by fungicidal and preservative treatments.

41. NADAN-MAIIAL, LUCKNOW.—Due to crystallization of soluble salts, the stones of a small pavilion platform had suffered from intensive flaking. After the removal of salt, the surfaces of the pillars and the carvings were consolidated and given a fungicidal treatment.

42. DHAMEKH STUPA, SARNATH, DISTRICT VARANASI.—The accumulation of soluble salts and growth of moss were removed from the sculptured veneering-stones with ammonia and paper-pulp. Some areas were given a coating of fungicide and consolidated. The work was kept in progress.

WEST BENGAL

43. SYAMARAI TEMPLE, VISHNUPUR, DISTRICT BANKURA.—This exquisitely-carved and ornate brick temple (pi. LXXIV A and B) remained under chemical treatment for the elimination of thick growth of moss on the exterior and a tenacious deposit of soot, moss and lime in its interior. Lissapol and triethanolamine were found effective for emulsifying the soot. The interior carvings looked bright after cleaning.

44. GUMTI GATE, GOUR, DISTRICT MALDA.—The chemical treatment of the moss-coated enamel-decoration, also subject to the expansive forces of crystallization of soluble salts, was continued *(1964-65,* p. 104) and was completed.

TREATMENT OF EXCAVATED OBJECTS AND MUSEUM-EXHIBITS

Twelve thousand seven hundred and eighty-five antiquities, variously of gold, silver, copper and iron, etc., were chemically treated and preserved in the laboratory of the Archaeological Chemist. Of these, eleven thousand and five hundred antiquities were copper coins from the colossal hoard of ninety-one thousand one hundred and thirteen coins found at Delhi and the remaining one thousand two hundred and eighty-five antiquities represented various types of metallic objects. Thirty paintings on paper received from the Archaeological Museum, Bijapur, were systematically treated and preserved.

The laboratory of the Baroda Museum and Picture-gallery was fully engaged in treating the exhibits of the Museum. In all, one hundred and forty-three exhibits were treated during the year. A new method was evolved for restoring broken statuaries with

soldering and unsuitable adhesives.[1] Metal objects from the Harappan levels at Rojdi were also analysed.[2]

Among the objects cleaned and preserved in the laboratory of the Department of Archaeology, Rajasthan State, were sixty sculptures from Abu, Bharatpur and Amber Museums, two figurines and a screen of wood and ninety-six copper coins.[3]

In the laboratory of the Department of Archaeology, West Bengal, several fossilized bones and teeth, especially of *Palaeoloxoden namadicus,* were cleaned and preserved using 5% vinyl acetate solution for hardening. Dirt and stains were cleaned with a 2% Tcepol solution. A seated bronze Buddha in *dharmachakrapravartana-mudra* was immersed in a 1% tartrate mixture with subsequent warming and brushing. Incrustations were removed by sesquicarbonate solution. After the object was free of chlorides and alkalinities, it was given a coat of 3% vinyl acetate. Eighteen silver coins were also cleaned and preserved.[4]

ANALYSES AND RESEARCH

1. GEOCHRONOLOGICAL STUDIES.—A large number of specimens of laterite were examined for the determination of the climatic conditions necessary for lateritization, in connexion with geochronological studies of Stone Age and other prehistoric sites. In addition, a large number of mechanical analyses of specimens of soils from several archaeological sites were carried out. Petrographic examination of a large number of specimens of pottery was undertaken with a view to throwing light on the techniques of manufacture. Several specimens of bone were subjected to fluorine analysis for determining their relative sequence.

2. CHEMICAL ANALYSES.—Ninety-five specimens comprising plaster, mortar, metals, etc., and fifty-six specimens of pottery and painted plaster were subjected to detailed chemical analysis, as a result of which much information was obtained about the nature of the specimens and ancient techniques.

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[1] Information from the Director, Museum and Picture-gallery, Baroda.

[2] Information from the Director of Archaeology, Government of Gujarat.

[8] Information from the Director of Archaeology and Museums, Government of Rajasthan. * Information from the Director of Archaeology, Government of West Bengal.

XI. ARCHAEOLOGICAL GARDENS[1]

ANDHRA PRADESH

1. HILL-TOP, NAGARJUNAKONDA, DISTRICT GUNTUR.—Further clearance of the site towards the eastern side of the Museum and around the garden office started earlier *(1964-65*, p. 106) was continued. Many more natural crevices amidst the sheet-rock were excava ted and refilled with suitable manured earth and planted with appropriate plants. The nursery was enlarged and many more varieties of plants were introduced. Cement-concrete pots of various designs in keeping with the general set-up were manufactured and planted with decent varieties of plants. The built-up slopes around the Museum were dressed up properly and covered with beautiful ornamental creepers.

BIHAR

2. EXCAVATED REMAINS, KUMRAHAR, PATNA.—An electric pumping-set was installed in the well to augment irrigation of the garden area.

3. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, NALANDA, DISTRICT PATNA.—Laying out of a pipe-line taken up earlier *(1964-65,* p. 106) for independent and efficient water-supply to the garden, was completed. Additional areas were brought under turfing to extend the lawns.

DELHI

4. RED FORT, DELHI.—In the Hayat Baksh garden, plantation of suitable varieties of plants was completed with a view to make it more charming.

5. KOTLA FIRUZ SHAH, DELHI.—The general condition of the garden was improved to make it popular with the picknickers.

6. ARCHAEOLOGICAL AREA, QUTB, DELHI.—With the taking over of the turbine pumping-set from the Central Public Works Department, irrigational difficulties were removed, and it was possible to keep the entire area of the garden green even during the hot summer.

7. ARAB-KI-SARAI, NEW DELHI.—As a part of the programme of 'Grow More Food', about half of the area of this garden was earmarked for cultivation and the rest with lawns and shrubberies kept in a presentable condition.

8. HUMAYUN'S TOMB, NEW DELHI.—The work of plantation of perennial roses along with the walls and channels taken up earlier was brought to completion and new varieties of roses were introduced in the nursery.

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[1] Information from : 15, the Director of Archaeology, Kerala State; 24 and 25, the Director of Cultural Affairs, Orissa; 28, the Director of Archaeology and Museums, Rajasthan; and the rest from the Garden Superintendent of the Survey.

9. JANTAR-MANTAR, NEW DELHI.—Besides the returfing of lawns, the garden was kept in a presentable condition.

10. LODI TOMBS, NEW DELHI.—The garden was kept in a fine condition despite heavy odds in matters of irrigation.

11. NAJAF KHAN'S TOMB, NEW DELHI.—As a part of the 'Grow More Food' operations, six acres of land was brought under wheat-cultivation. Though the sowing was done very late in December, the yield was quite satisfactory.

12. PURANA-QILA, NEW DELHI.—The entire area inside the fort was freed from jungle and unwanted growth.

13. TOMB OF SAFDARJUNG, NEW DELHI.—Different varieties of roses were introduced and the fountains kept playing throughout the year.

GOA, DAMAN AND DIU

14. GARDEN, GOA VELHA.—Plantation made earlier showed satisfactory growth despite earlier missings. As a measure to provide an effective irrigation-system, a network of pipe-lines was laid out. The defunct well behind the Church of the St. Francis of Assisi was desilted and partially bored for the supply of water.

KERALA

15. MISCELLANEOUS GARDENS.—The gardens in the monuments like Krishnapuram, Padmanabhapuram and Kottapuram forts continued to be maintained with the addition of new plants like jasmine and ossimum in conformity with the ancient nature of the monu ments. A fountain was constructed in front of the Krishnapuram palace to add to its grandeur.

MADHYA PRADESH

16. GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—An area of five acres was returfed with Calcutta *dub-grass* brought from Agra. The work of fixing stone-edging along the periphery of lawns with Panna sandstone was in steady progress.

MAHARASHTRA

17. FORT, SHANWARWADA, POONA.—The plots of the lawns, which had degenerated, were re-grassed with Calcutta *dub-grass* and new beds of cannas were introduced. Service-line connexion was obtained for the electric pumping-set which has considerably eased the water-supply to this garden.

MYSORE

18. ALI II RAUZA, BIJAPUR.—Strenuous efforts were made to grow the seeds of hybrid maize for a bumper crop. In the ornamental garden, many new varieties of shrubs were introduced.

19. ARQUILLA, BIJAPUR.—The dry moat popularly called Arquilla, situated in the centre of the town, was utilized for laying considerable quantities of transported silt. The natural slope of the sides of the moat was taken advantage of for developing lawns; pathways were also provided. A strong boundary-line was erected and grill-gates provided at appropriate places.

20. GOL-GUMBAD, BIJAPUR.—A number of varieties of bougainvilleas and hibiscus were planted in a systematic manner. The jasminium plot was further extended and planted with a few more varieties of white flowering shrubs.

21. IBRAHIM RAUZA, BIJAPUR.—The entire area of this garden, excepting the frontage, was exclusively devoted to hybrid maize cultivation.

22. HOYASALESVARA TEMPLE, HALEBID, DISTRICT HASSAN.—Initial work for laying out a garden around this important temple of tourist attraction was completed according to an approved plan. Planting and grassing could not be done due to acute shortage of water as the Dvarasamudra lake, the source of water, was completely dried up due to the failure of rains. However, the laying out of pipe-line was completed and an electric motor pumping-set installed inside a newly-built pump-house.

23. KESAVA TEMPLE, SOMANATHPUR, DISTRICT MYSORE.—Much of the work pertaining to laying out an ornamental garden, including network of pipe-lines, was completed and a major portion of the area grassed with Calcutta *dub*. The periphery was closely planted with a row of Mechelia Champaka. An electric motor pumping-set was also installed in a sunk pit by the side of the well.

ORISSA

24. KENDULI, BAILPATNA, DISTRICT PURL—An area of 5-81 acres of land allotted for the Jayadeva Cultural Centre was cleaned and a fencing provided around it for developing a garden.

25. LAKSHMANESVARA TEMPLE, BHUBANESWAR, DISTRICT PURL—The area surrounding the monument was cleaned and levelled for laying out a garden.

RAJASTHAN

26. ANASAGAR BARADARI, AJMER.—Turfing of the area set apart for lawn was done and necessary preliminary steps with regard to the electrification and installation of a pumping-set and laying out of the pipe-line were completed.

27. DIG PALACES, DIG, DISTRICT BHARATPUR.—Plantation of rose was further extended and canna beds introduced in the sunken area on either side of the main palace. Irrigation pipe-lines were fully laid and connected with a 15 horse-power pumping-set over the reservoir on the south.

28 MISCELLANEOUS GARDENS.—Beginning of a small garden was made inside Akbar's fort. Some flower-pots were also provided there. The Chaman Bagichi in front of the State

Museum, Bharatpur, the Dilaram Gardens together with those within the palaces at Amber and those inside the Observatory at Jaipur were maintained.

UTTAR PRADESH

29. FORT, AGRA.—The lawn in front of the Jahangiri-Mahal was returfed. The area outside the fort was entirely devoted to cultivation of potato and wheat as the Survey's contribution to the 'Grow More Food' campaign. An electric pumping-set was installed in the well (outer area) after its desilting and boring with a 5-in. pipe.

30. IDGAH, AGRA.—Stone-edging along the roads with red sandstone was completed. This has imparted a new and better look to the garden.

31. I'TIMADU'D-DAULA, AGRA.—Re-turfing of two rear plots of lawns with Calcutta *dub-grass* was carried out.

32. KHAN-I-'ALAM, AGRA.—In the lower part of the nursery, rosarium was laid out and more up-to-date varieties of roses were introduced. Necessary repairs to the old glass house and vineyard in the upper part were also carried out.

33. RAM-BAGH, AGRA.—Cultivation of food-crops like potato, gram, etc., under the 'Grow More Food' campaign was taken up in the vacant areas of this garden.

34. TAJ MAHAL, AGRA.—Four plots of lawns were regrassed with Calcutta *dub-grass.* The existing rosarium was reconditioned. Artistic ornamental fencing all along the lawns of the forecourt was fixed to improve the look of the surroundings.

35. AKBAR'S TOMB, SIKANDARA, AGRA.—An area of about six acres in the rear portion of the compound was further grassed with Calcutta *dub-grass* and approach roads were laid out with a view to develop this area. An area of twelve acres comprising mangoes, citrus and mulberry was brought under the orchard. The roads leading to the Dak Bungalow were provided with a shrubbery border with choicest varieties of plants. Intensive cultivation of wheat and gram was undertaken in an area of about 15 acres.

36. GROUP OF MONUMENTS, FATEHPUR SIKRI, DISTRICT AGRA.—Plots of lawns in front of the Dak Bungalow and the monument known as the Treasury were returfed with Calcutta *dub-grass.* About one thousand pits were dug along the slopes from Agra gate to the ancient Record Office and planted with suitable varieties of flowering and timber trees and ornamental shrubs. Vacant land inside the caravansarai was brought under gram-cultivation.

37. RESIDENCY BUILDINGS, LUCKNOW.—The garden was kept in a presentable condition throughout the year and the general standard of maintenance further improved.

38. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, SARNATH, DISTRICT VARANASI.—The existing pipe-line was extended to ensure water-supply to every part of the garden. A garden was laid round Chaukhandi *stupa* and boring of the well and its electrification were undertaken to facilitate irrigation of the area.

XII. PUBLICATIONS

PUBLICATIONS OF THE SURVEY

1. ANNUAL REPORT ON INDIAN EPIGRAPHY.—The Report for 1961-62 was published.

2. EPIGRAPHIA INDICA.—The following parts of volume XXXVI were published: parts IV (October 1965), V (January 1966) and VI (April 1966).

3. EPIGRAPHIA INDIGA—ARABIC AND PERSIAN SUPPLEMENT.—The numbers for 1963, 1964 and 1965 were published.

4. INDIAN ARCHAEOLOGY—A REVIEW.—The number for 1962-63 was published.

5. GUIDE BOOKS.—Guide to Khajuraho by K. Deva was printed. Guides to Ajanta and Sanchi by D. Mitra were reprinted.

6. PICTURE POST CARDS.—The following sets were reprinted: (i) Belur, (ii) Bijapur, (iii) Chitorgarh, (iv) Ellora, (v) Gwalior, (vi) Halebid, (vii) Hampi, (viii) Khajuraho, (ix) Modhera and Patan, (x) Somnathpur and (xi) Sravanabelgola.

OTHER PUBLICATIONS

7. JOURNALS.—Volumes V and VI of {*Researcher* Journal of the Department of Arch aeology, Government of Rajasthan) and *Orissa Historical Research Journal,* XII, No. 2, were published by their respective Governments.

8. INSCRIPTIONS.—*Inscriptions of Orissa,* by S. N. Rajguru, was published by the Government of Orissa. *Indian Epigraphy and South Indian Scripts,* by C. Sivaramamurti was reprinted by the Government of Madras.

9. MUSEUM PUBLICATIONS.—*A Catalogue of Antiquities in Patna Museum, The Embroidery and Beadwork of Kutch and Saurashtra* by J. M. Nanavati, M. P. Vora and M. A. Dhaky, *Descriptive Catalogue of Sanskrit Manuscripts* edited by M. P. Desh and *A Supplementary Cata logue of Mughal coins* (in State Museum, Lucknow) by C. R. Singhal besides a brief Lucknow Museum Guide-book (in Hindi) were published respectively by the Patna Museum, the Governments of Gujarat, Orissa and Uttar Pradesh.

10. MISCELLANEOUS PUBLICATIONS.—The Government of Madras reprinted *Nagapattinam Bronzes* by T. N. Ramachandran. The Kerala and West Bengal Governments respectively brought out *Early coins from Kerala* and *Exploring Bengal's Past* and an album entitled *The Terracottas ofHatampur.*

11. PICTURE POSTCARDS.—A set of picture postcards showing some of the exhibits of the State Archaeological Gallery was produced by the Government of West Bengal.

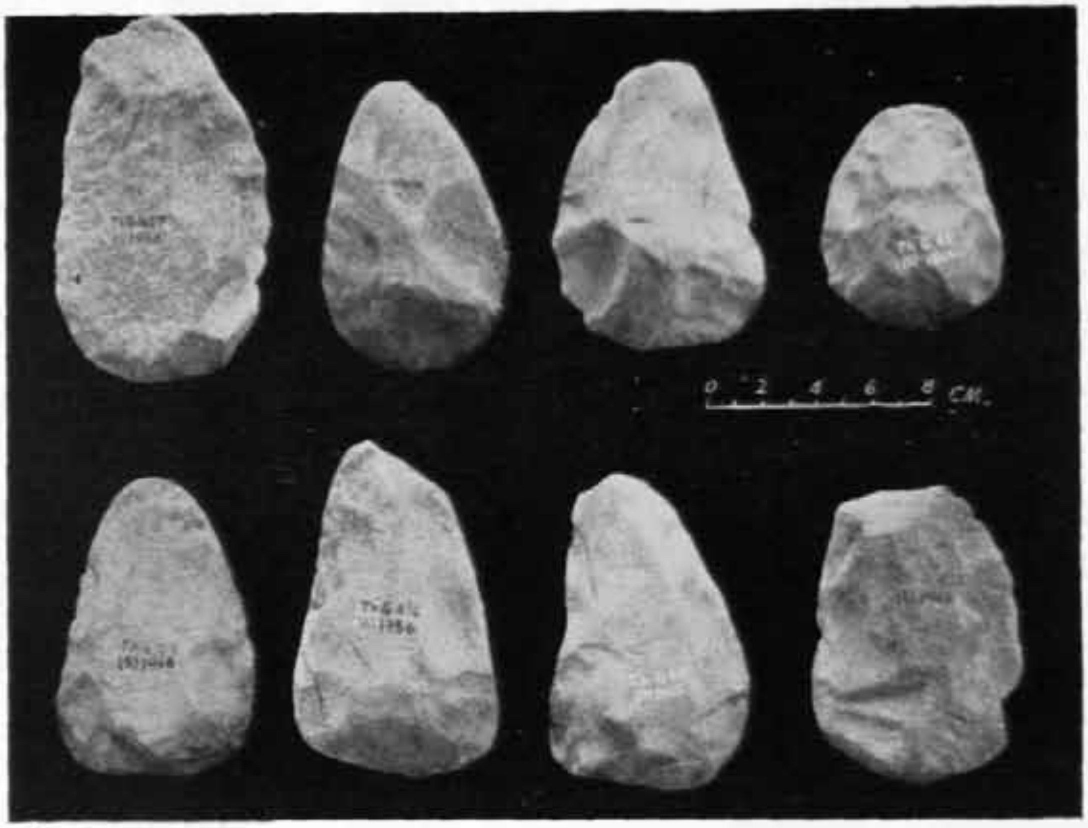


A

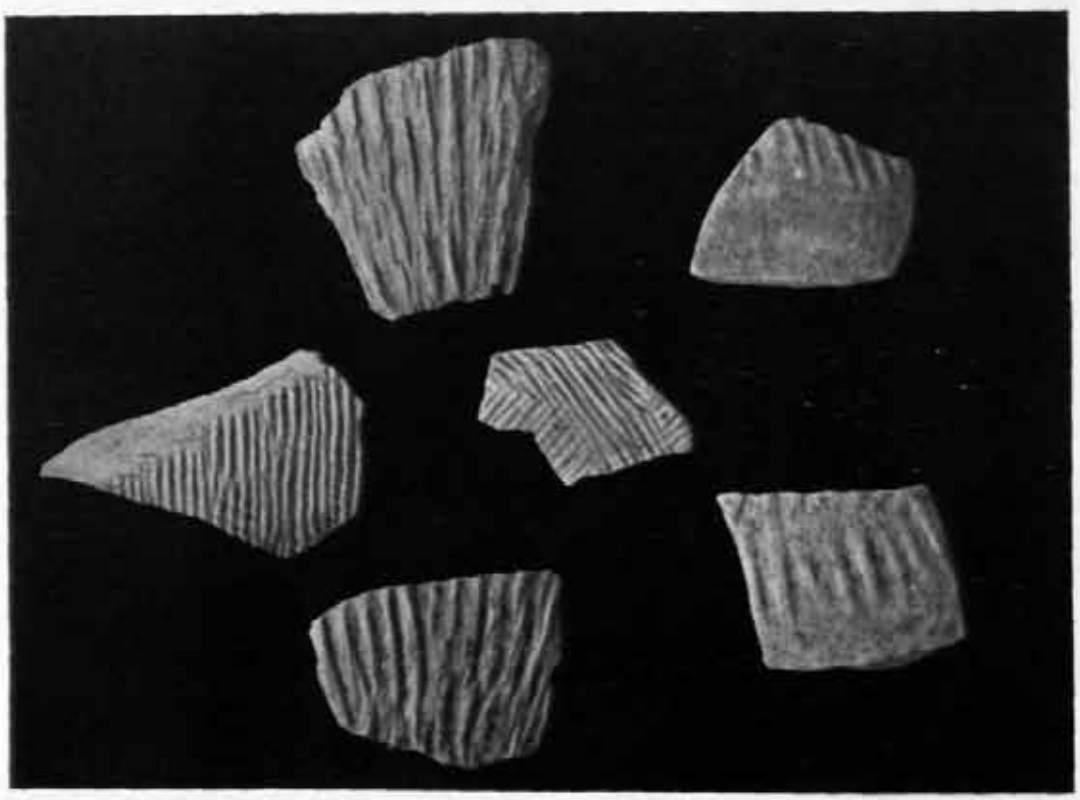


B

Kesanapalli : A, *close view of the stupa* ; B, *inscribed slab on the southern side of the stupa.* *See p. 3*



A



B

A. *Thusekgiri: chipped stone axes of dolerite;* B. *Kamakhya Hills: neolithic pottery showing cord-impressed designs.* *See p. 6*

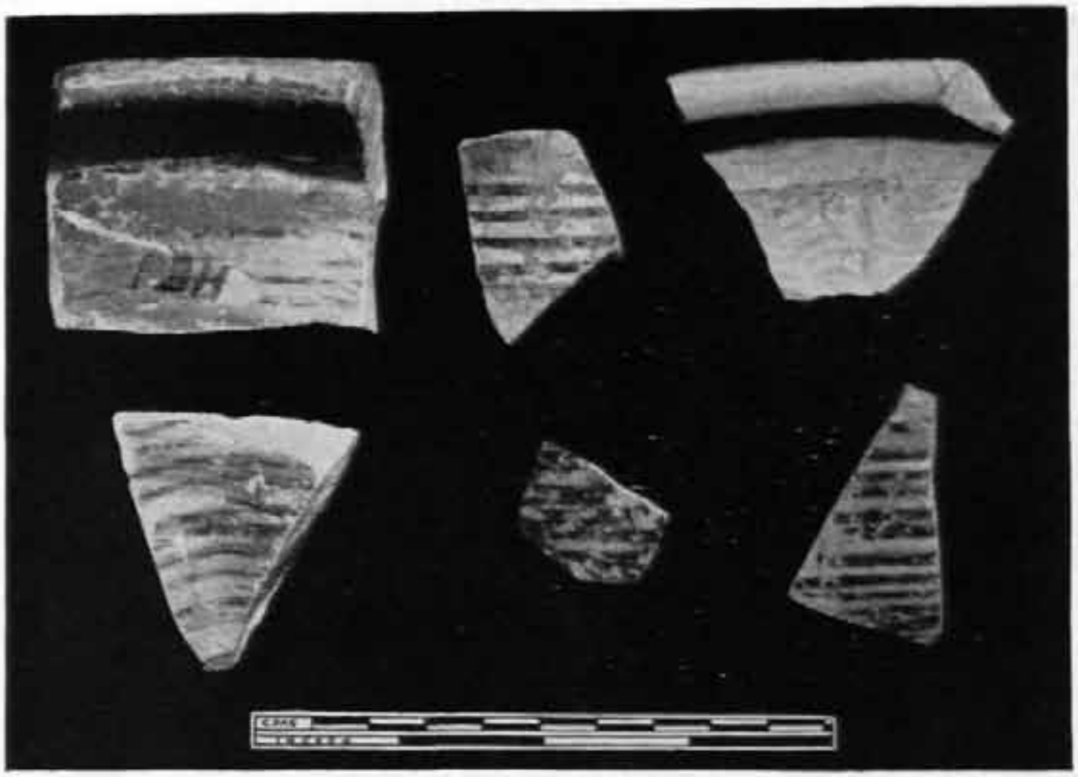


A

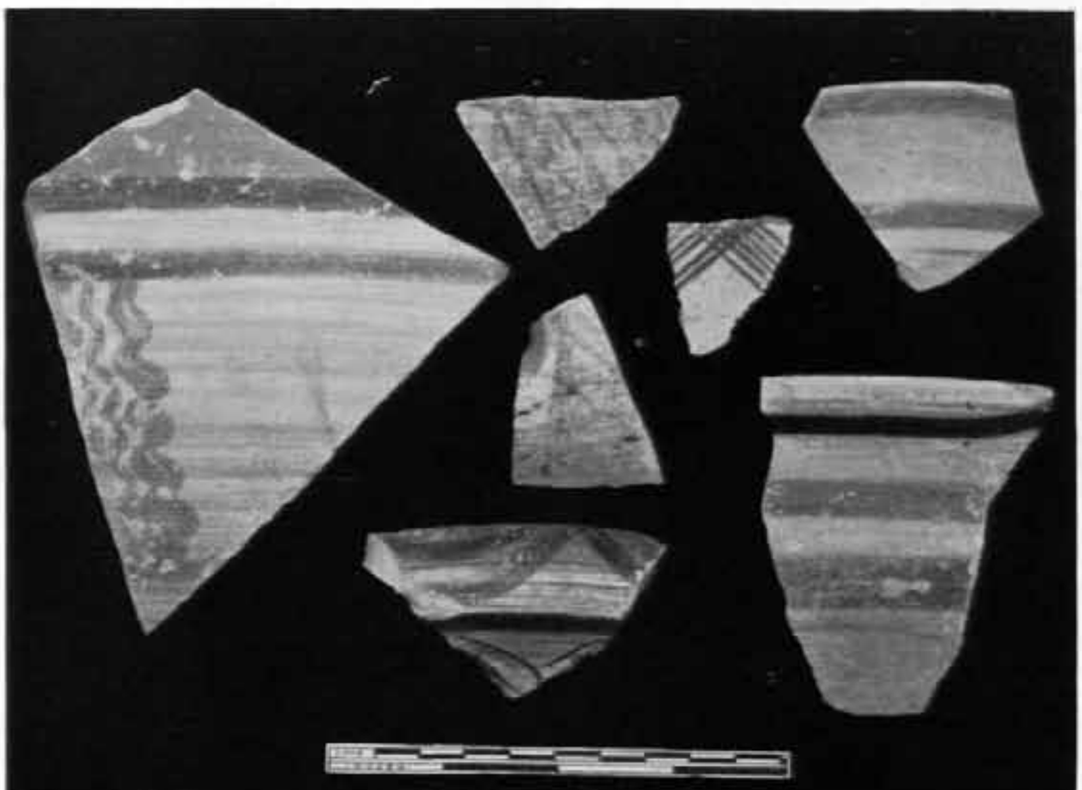


B

Khuntitoli: A, *general view of the site showing megaliths*; B, *burial-pit after excavation*. *See p. 10*

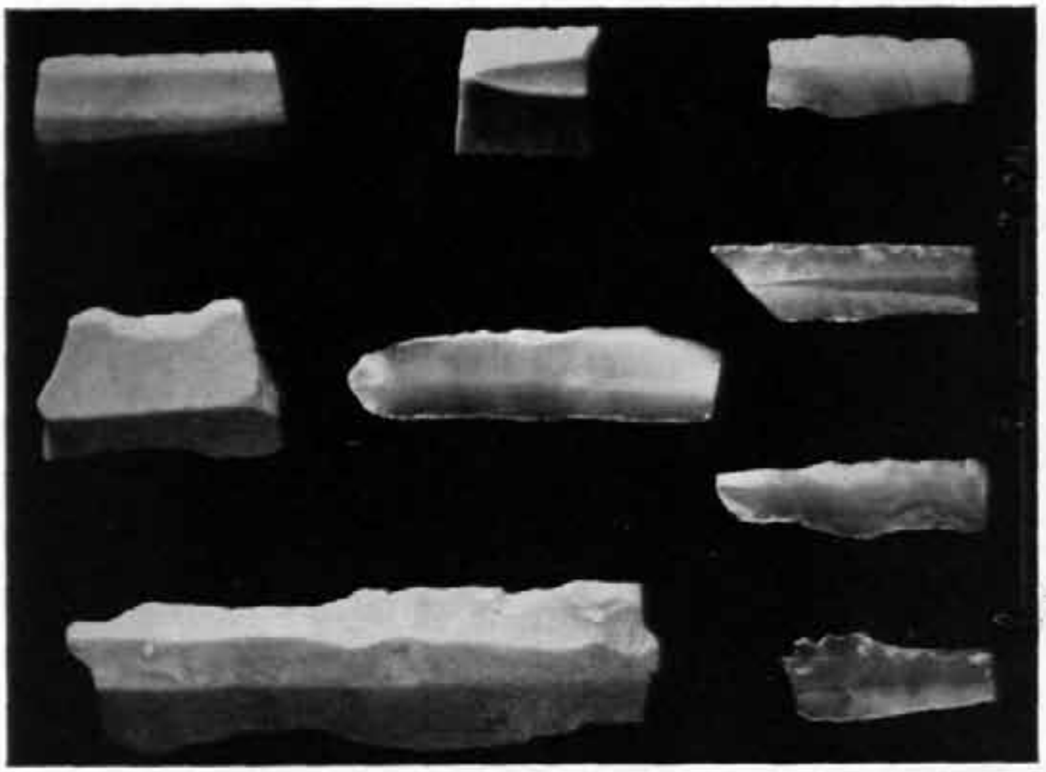


A

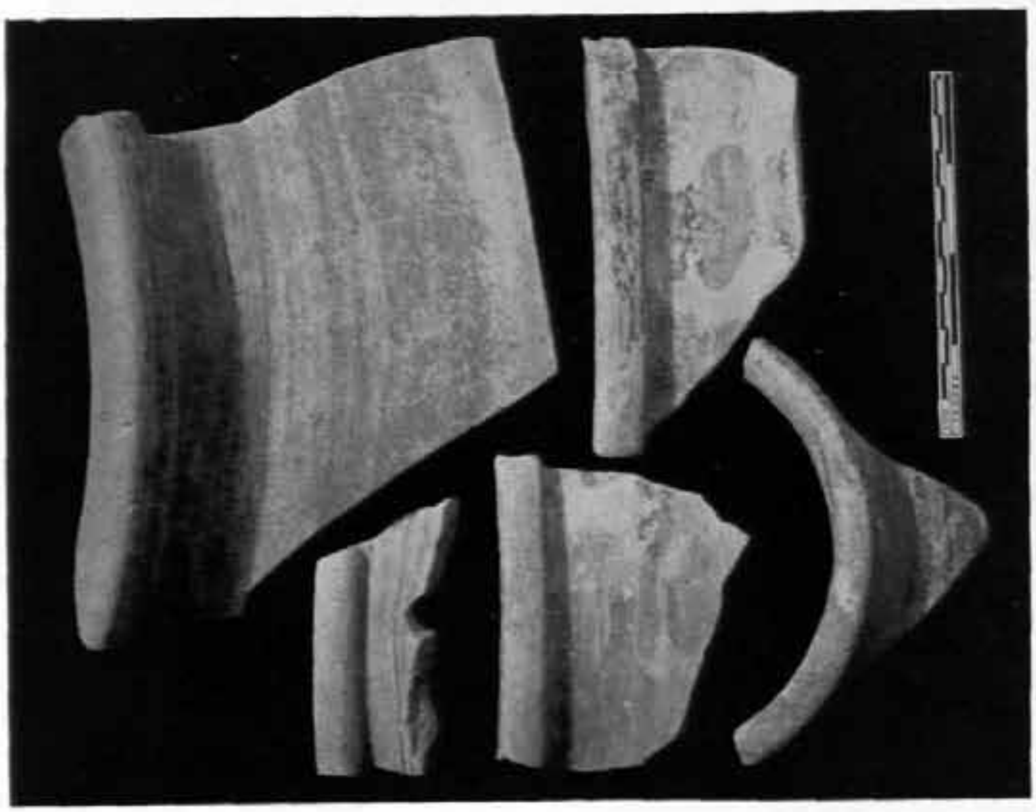


B

Kutch: A. *'Reserved slip' ware;* B. *Harappan pottery.* *See p. 14*



B

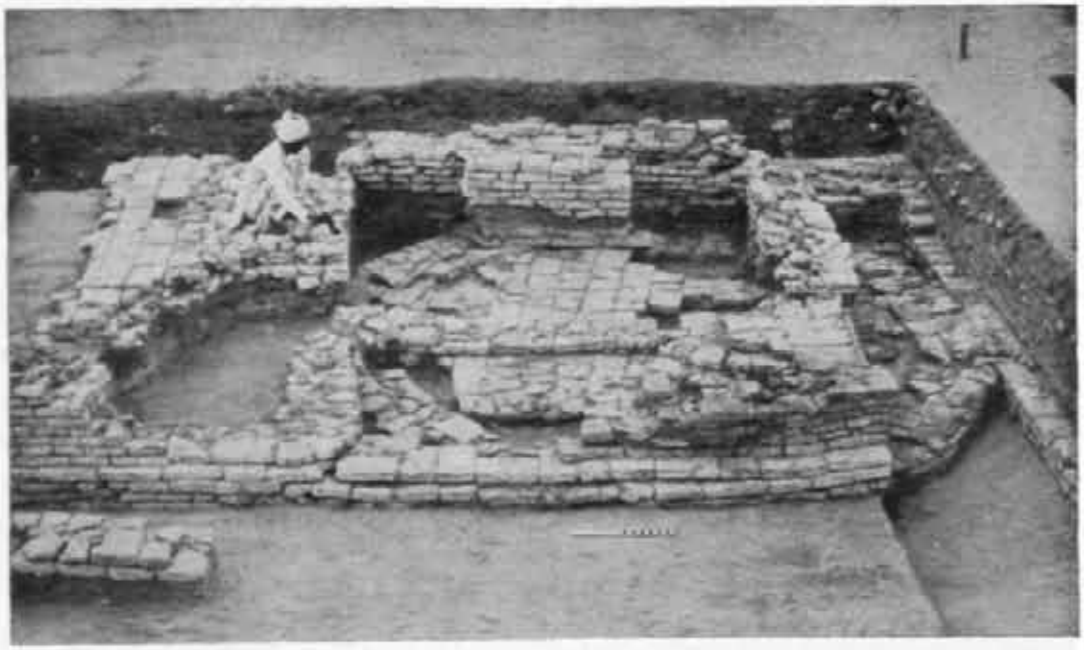


A

Kutch: A, Harappan pottery types; B, blades on chert and chalcedony. *See p. 14*



Modhera: general view of the brick retaining wall in the west. *See p. 18*

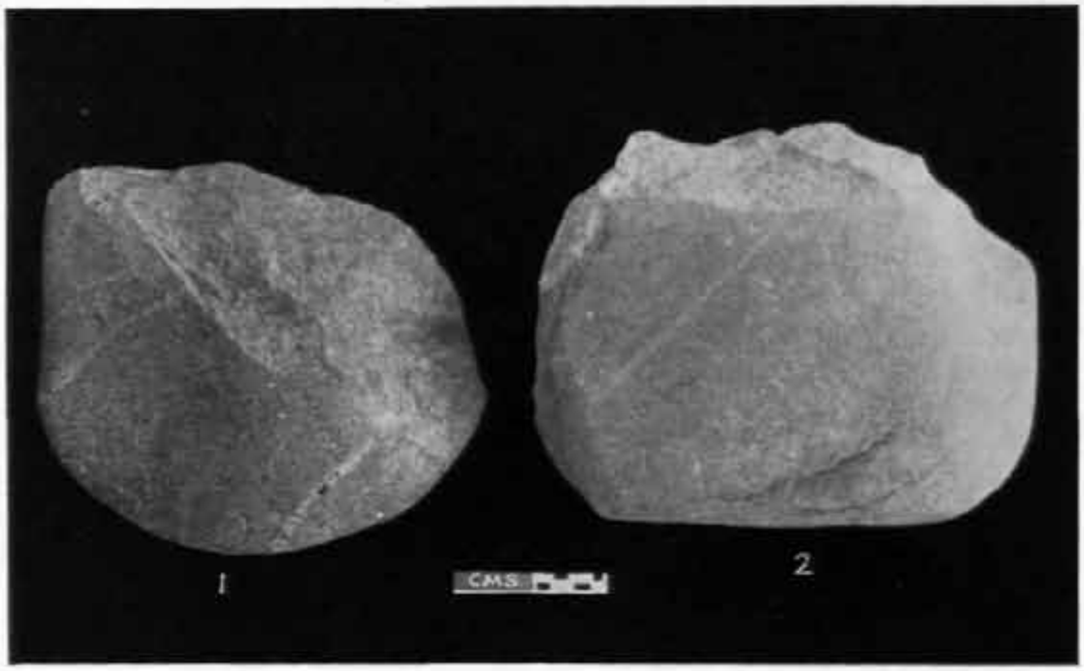


A

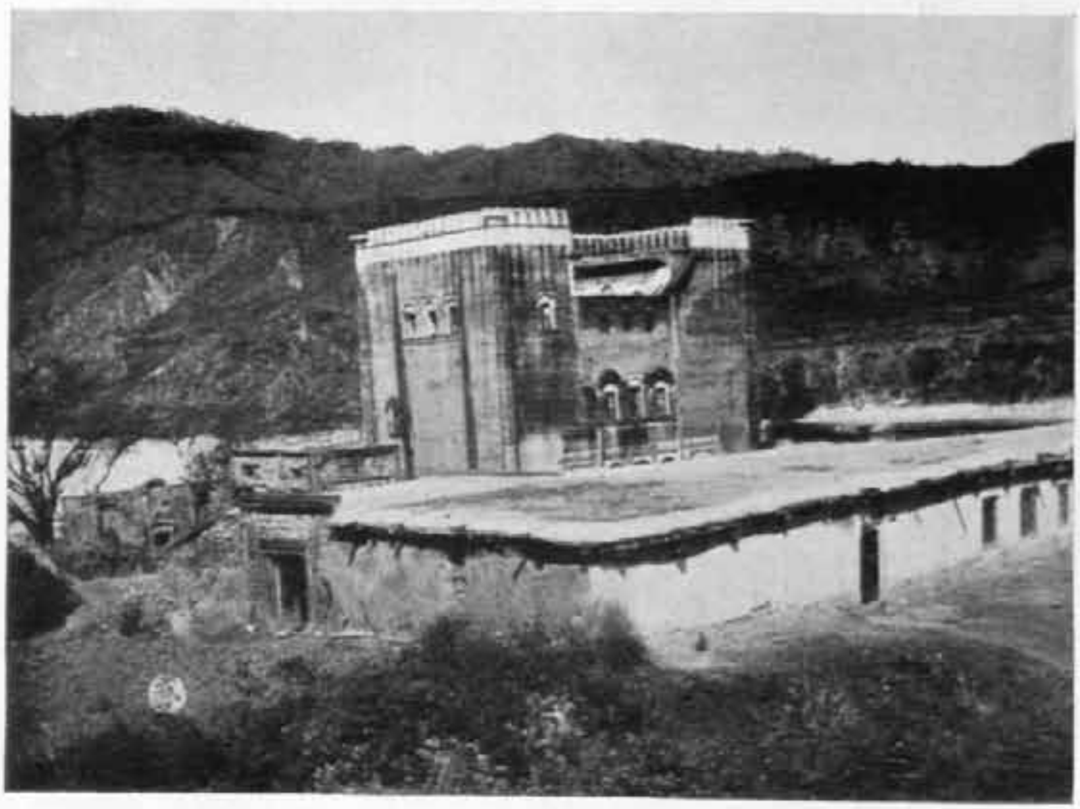


B

A. *Modhera: circular brick structure in the south-western corner of the temple;* B. *Sejakpur: view showing walls running below the basement of the temple.* *See p. 18*

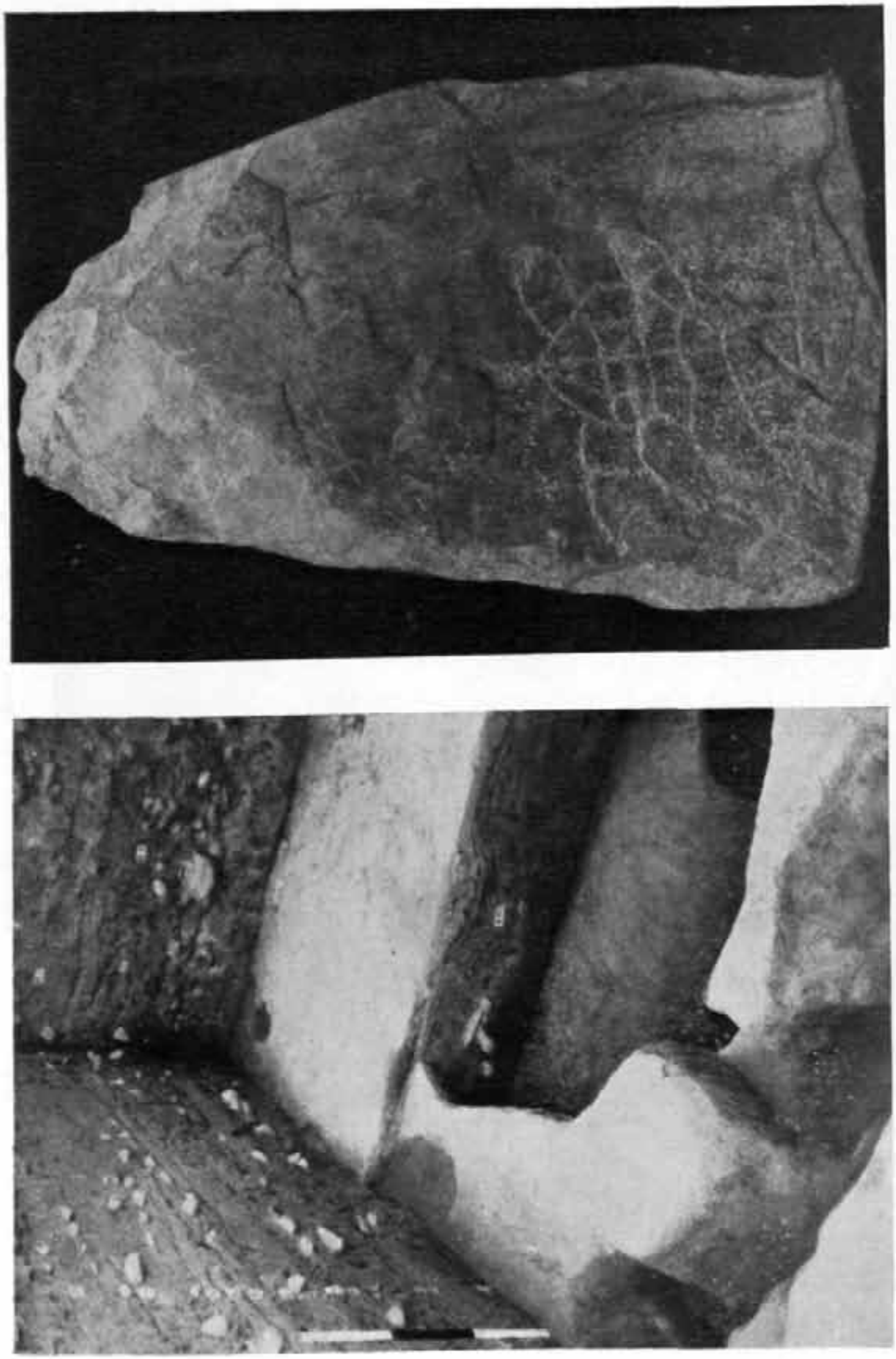


A



B

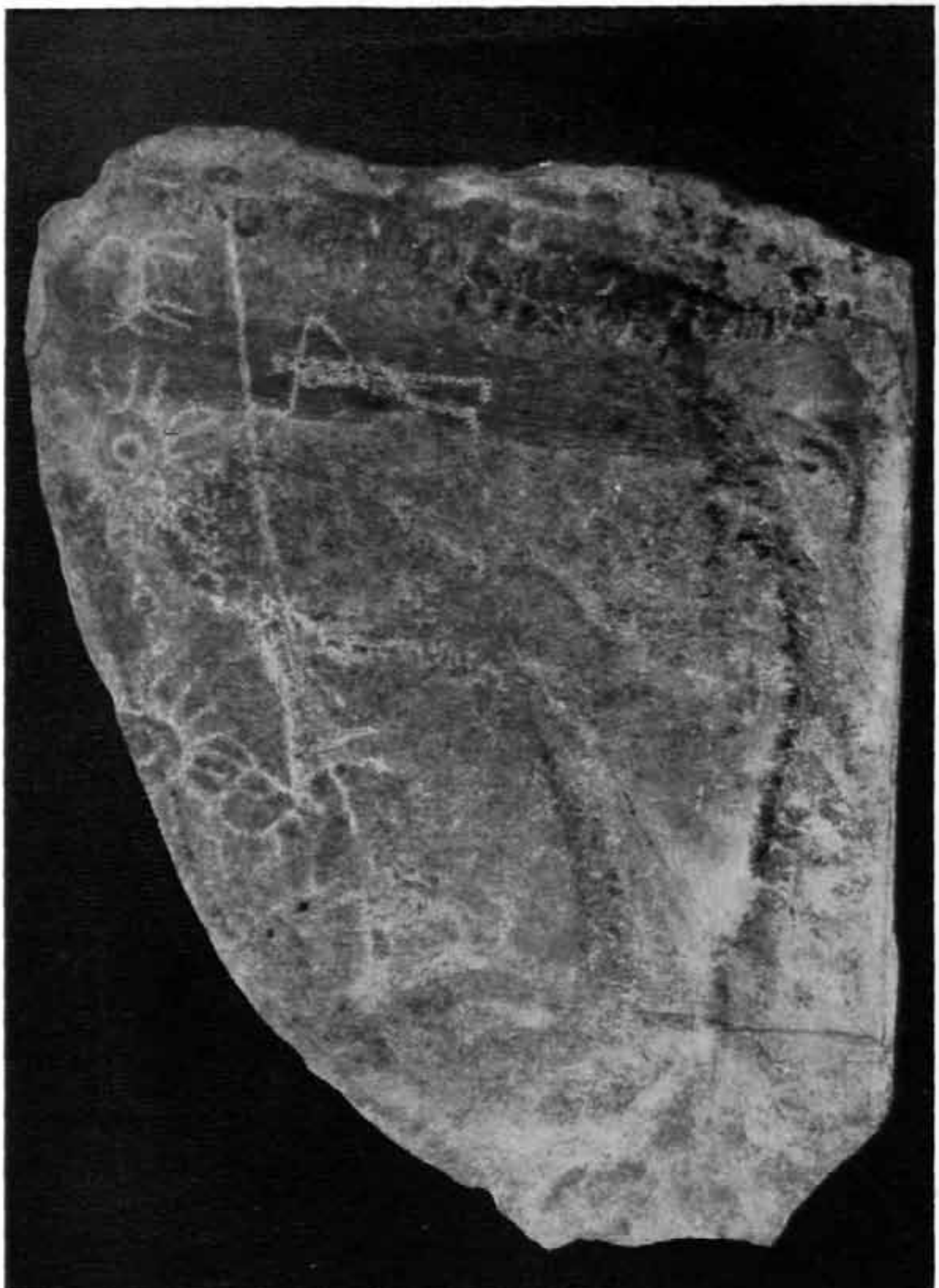
A. *Kathua: unifacial pebble tools;* B. *Riasi: palace of Zorawar Singh.* *See pp. 19 and 20*



B

A

Burzahom: A, dwelling-pit sealed by red ochre floor of Phase II: B, stone slab with engraving. See p. 19



Burzahom: stone slab showing a hunting-scene. *See p. 19*



B

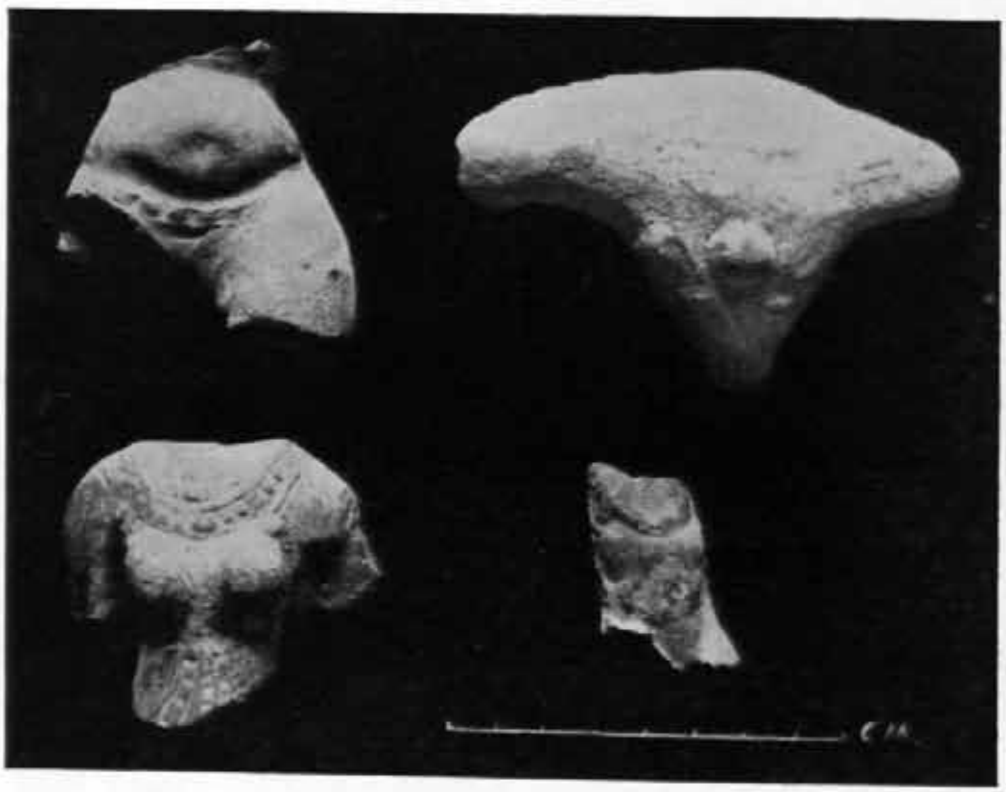


A

A. *Riasi : a painted panel in the palace;* B. *Salal : wooden sculptures in the compound of the temple.* *See pp. 20 and 21*



A



B

A. *Kaveripattinam: circular brick structure with animal remains;* B. *Uraiyur: terracotta figurines.* *See pp. 24 and 27*



A

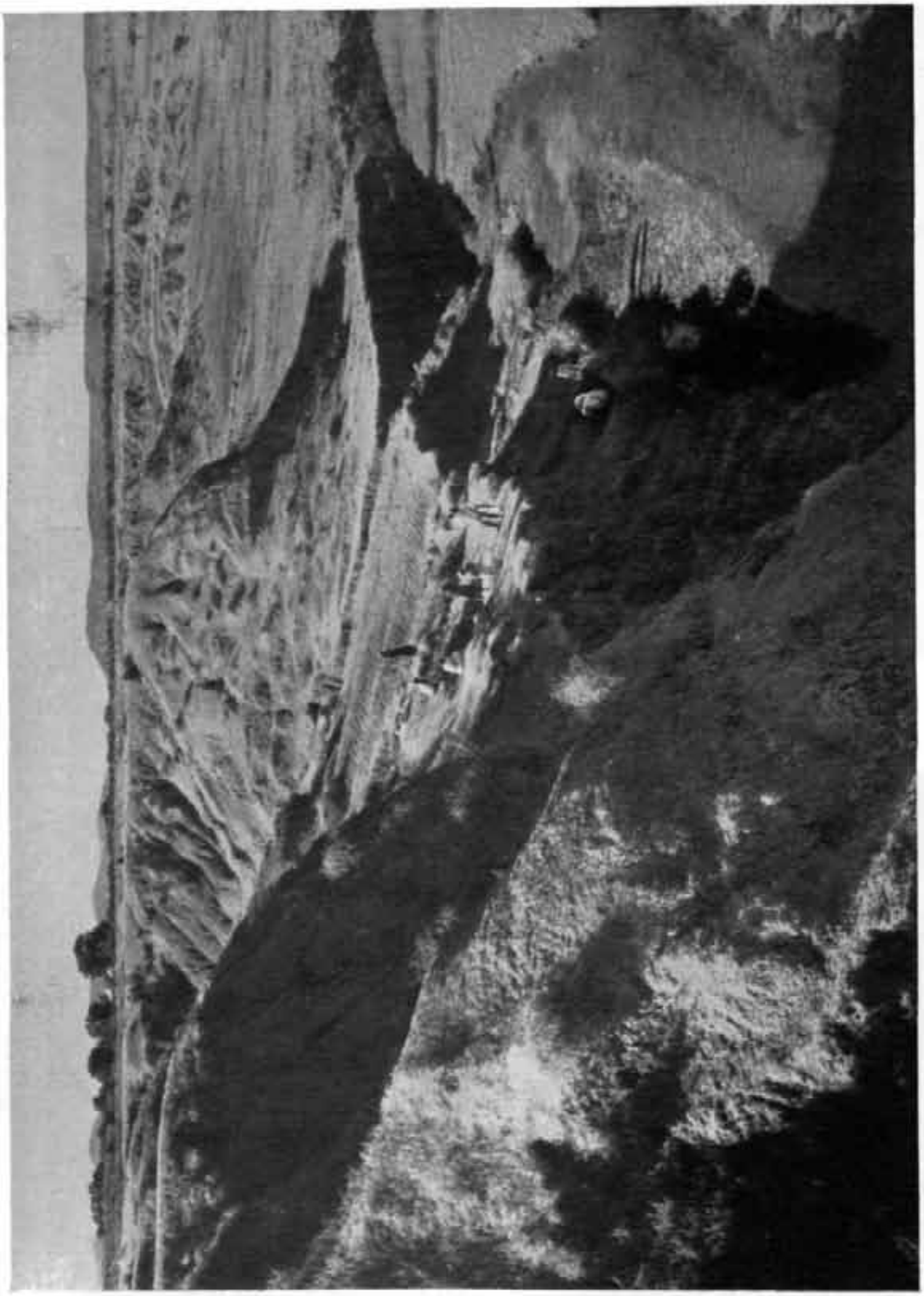


B



C

A. *Kausan: kaolin figurines;* B. *Paithan, ivory lion-capital, and* C. *Paithan, underground chamber of a house, Period IV.* *See pp. 28 and 29*



Bhadne : excavation in progress on the right bank of the Kan river. *See p. 29*



A



B

A. *Bhadne : section on the left bank of the river showing a succession of gravels, sand, calcareous tufa and clay;* B. *Gangapur : section on the right bank of the Godavari showing basal red clay.* *See pp. 29 and 31*

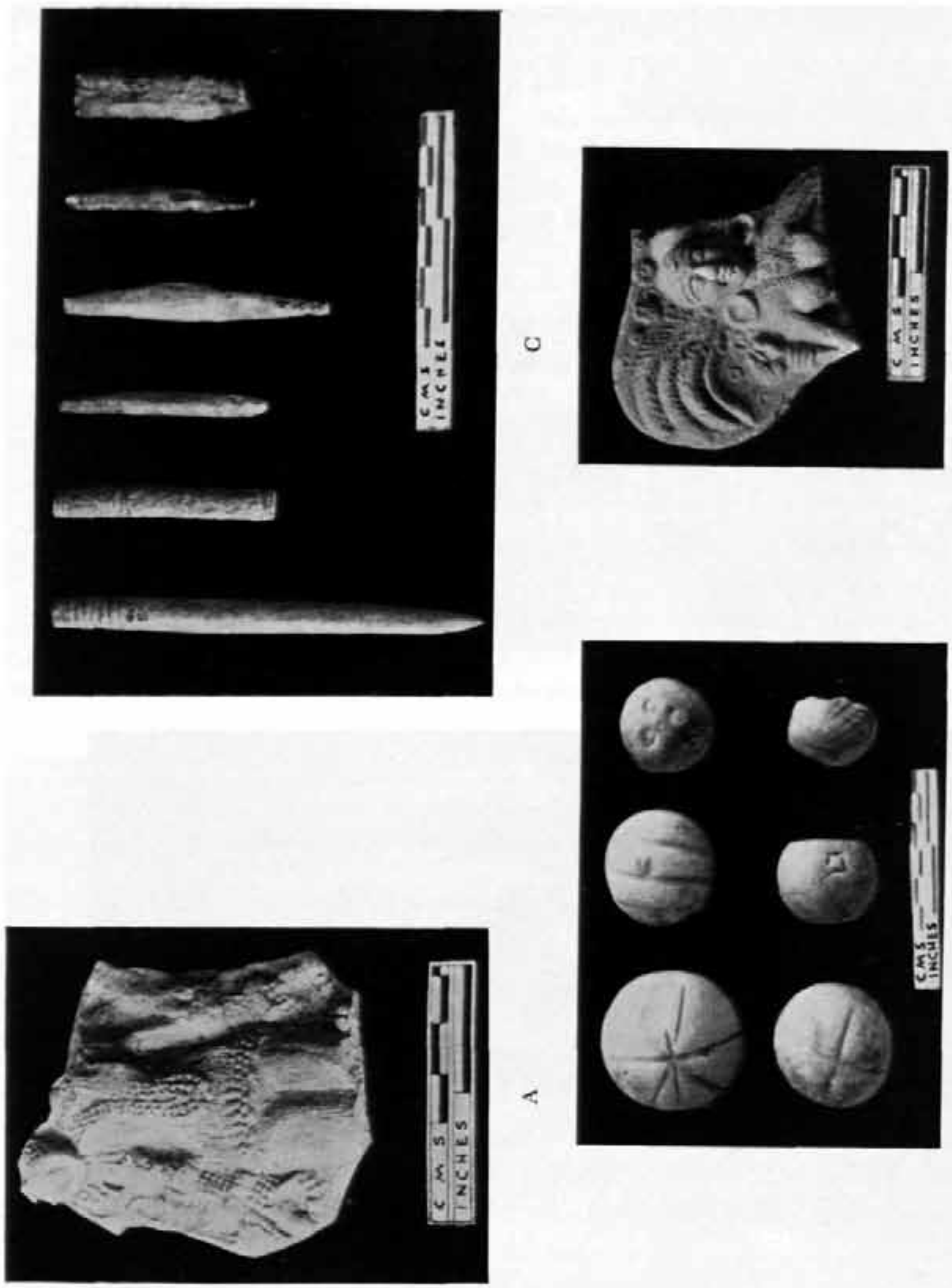


A



B

A. *Halingali : megalithic cist of the Greek cross plan, during excavation;* B. *Terdal : megalithic circular cist with a passage, during excavation.* *See p. 34*



Sugh: A *and* D, *terracotta figurines, Sub-period IB;* B, *terracotta marbles, Period II; and* C, *bone and ivory points or styluses, Sub-period IB.* *See p.* 36



A



B

A, *general view of Ki monastery;* B, *general view of Tabo monastery.* *See pp. 36 and 37*



A



B

A. *Ki: a wall-painting in Nagpo Gurusam monastery;* B. *Tabo: wall-painting of Aryavalokitesvara in the hill-side Du-Wang monastery.* *See p. 37*



Tabo monastery: a wall-painting from Du-Wang. *See p. 37*



A



B

Tabo, Du-Wang: A *and* B, *wall-paintings depicting unidentified Jataka stories.* *See p. 37*

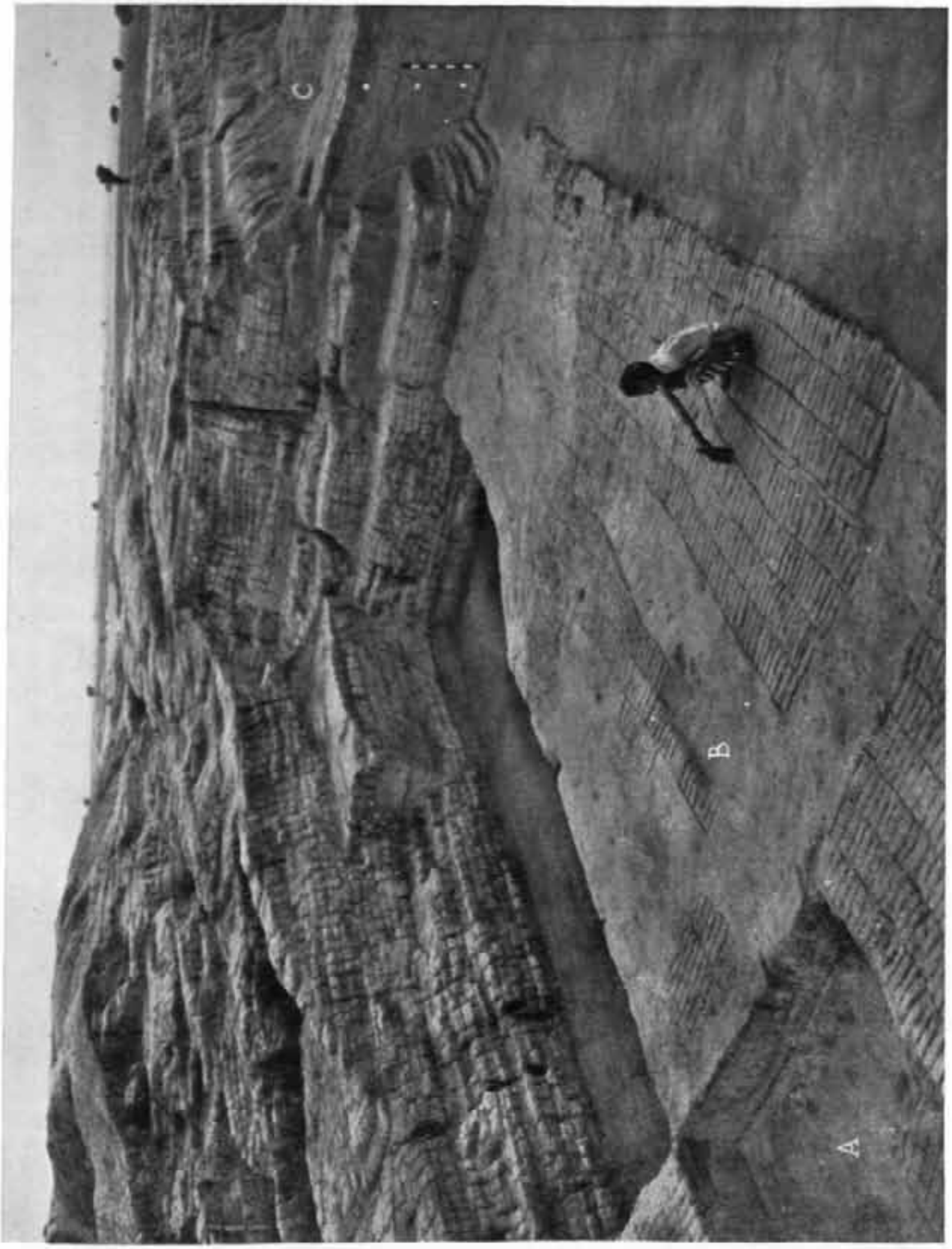


A



B

Kalibangan : KLB-1, A, *salient on bipartite fortification-wall of citadel (Period II), looking south-east;* B, *passage between inner face of bipartite fortification-wall and platform (in the left margin). The buttress added in the later phase of the fortification-wall can be seen in the middle distance above the scale, looking north-west.* *See pp. 39 and 40*



Kalibangan, KLB-1: view showing three successive brick-on-edge pavements, respectively at A, B and C, on the north of the bipartite fortification wall of the citadel, looking south-west. *See p. 39*



A

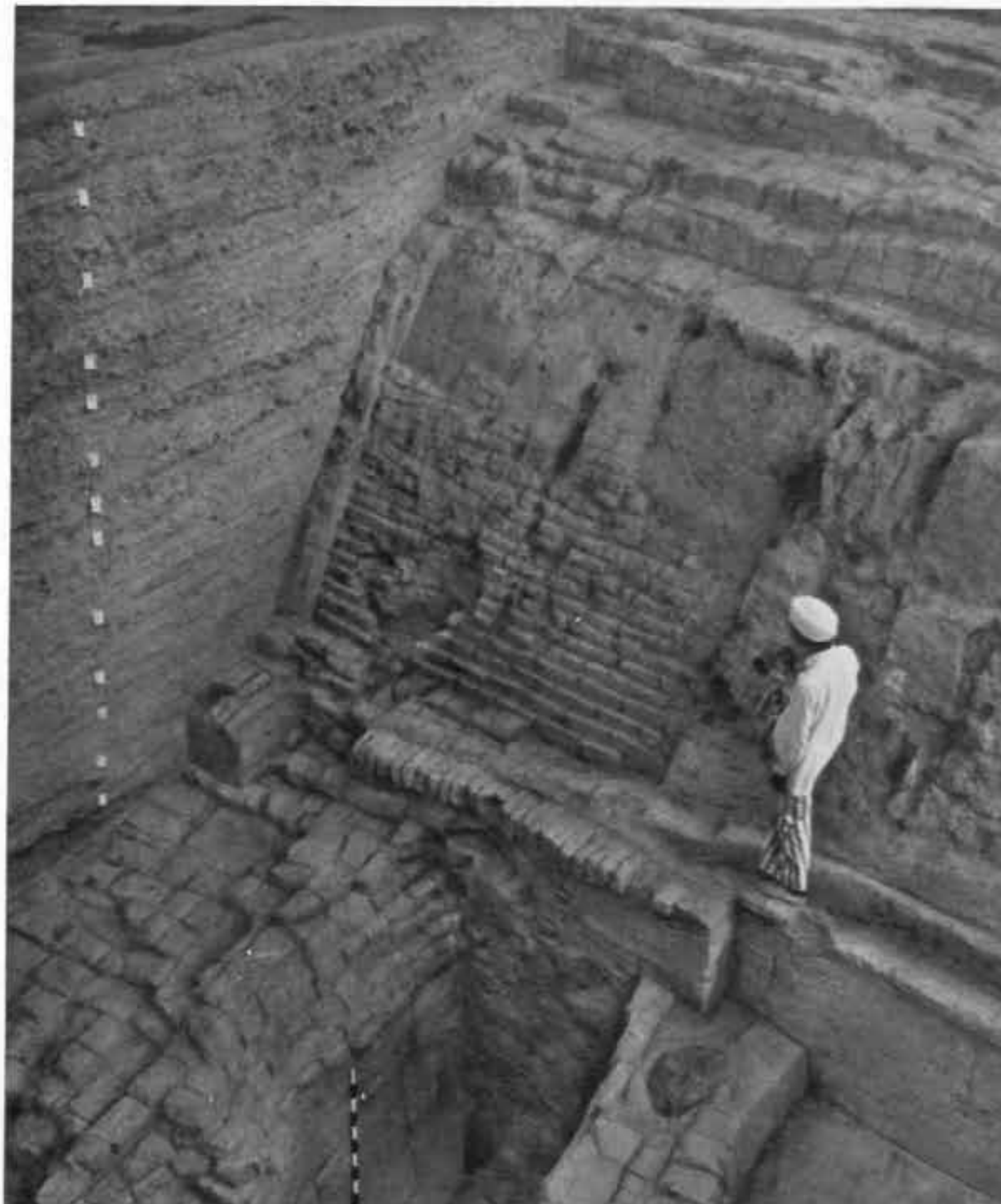


B

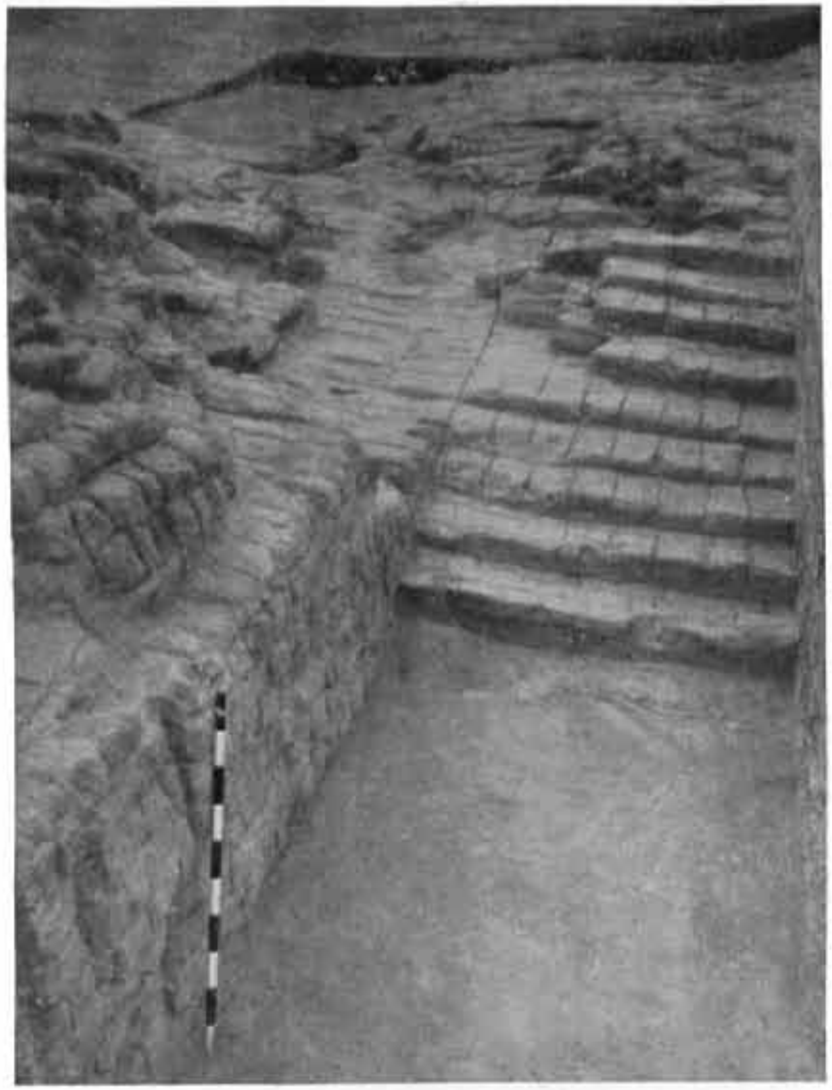
Kalibangan, KLB-1: pre-Harappan fortification wall ; A, on the western side, view of the inner face; B, on the southern side, damaged by the Harappan (Period II) gateway-complex (looking north-east). The figure is standing in the entrance passage. See pp. 39 and 40



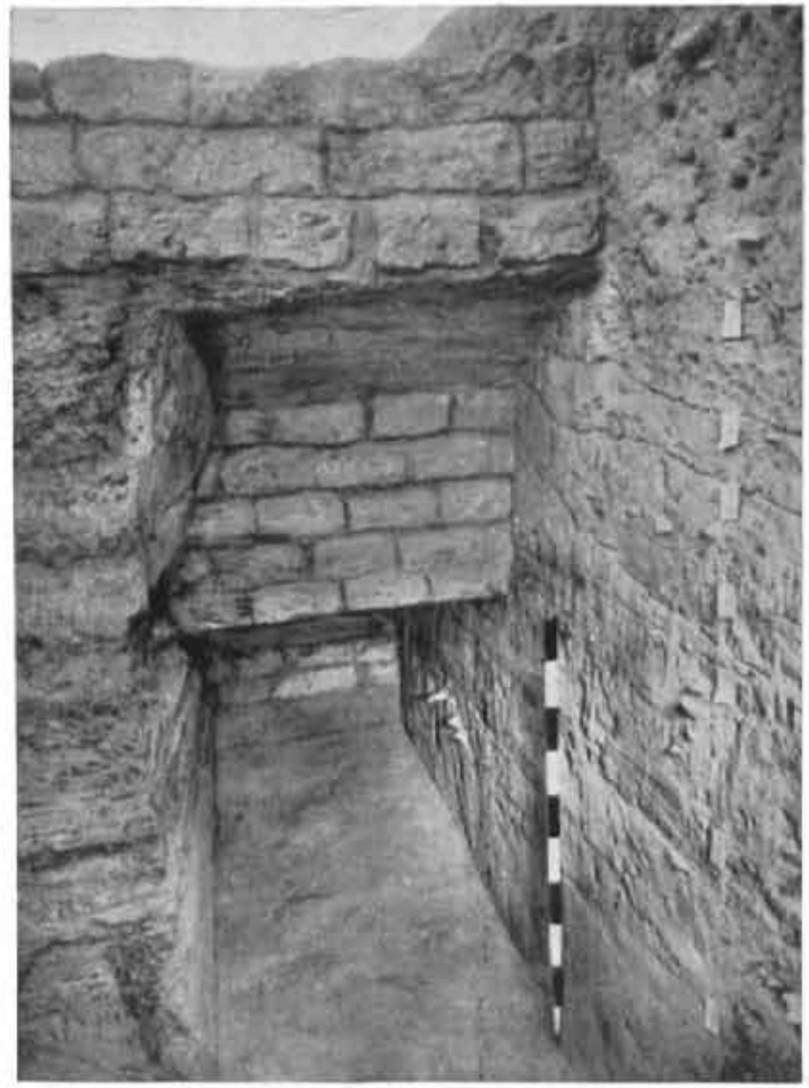
Kalibangan, KLB-1: section against the excavated mud-brick platform showing two principal structural phases, looking north-west. *See p. 40*



Kalibangan, KLB-1 : view showing the pre-Harappan (Period I) structures running below the salient of the Harappan (Period II) bipartite fortification-wall, looking south-east. The white band at the bottom represents the natural soil. *See p. 40*



A



B

Kalibangan, KLB-1: A, *entrance stairway leading across the bipartite fortification-wall to the southern half of the citadel (Period II), looking west. The scale is placed against the northern face of the bipartite fortification-wall;* B, *tunnel section below the Harappan (Period II) fortification wall on the north showing two successive phases of the pre-Harappan (Period I) fortification wall looking north-west. See pp. 39 and 40*

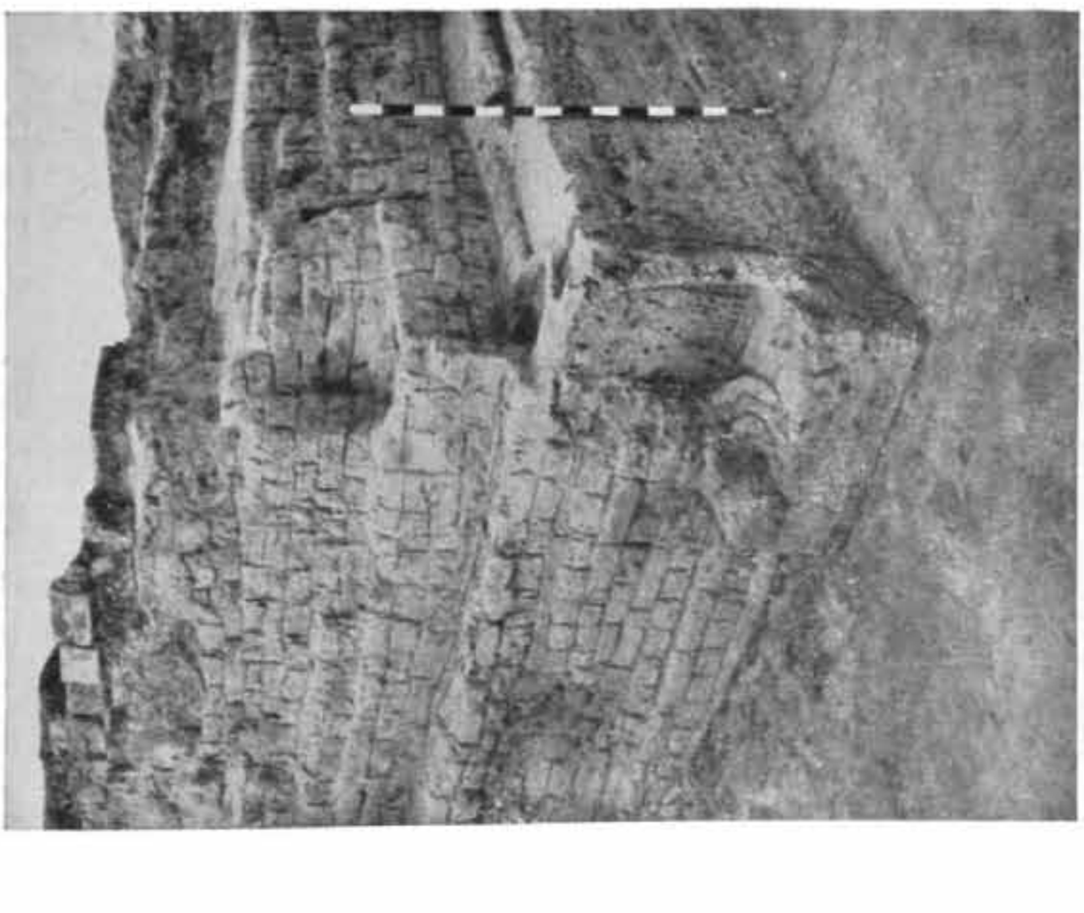


A



B

Kalibangan, KLB-2: A, *part of the east-west thoroughfare (Period II) showing crossings with the north-south ones;* B, *an excavated house (Period II) showing plans of different structural phases, looking south-east. The figure on the top left is shown walking in the north-south thoroughfare.* *See p. 41*

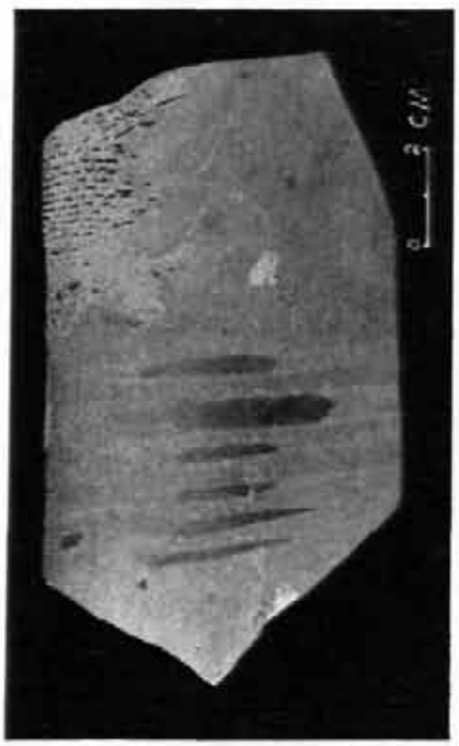


A



B

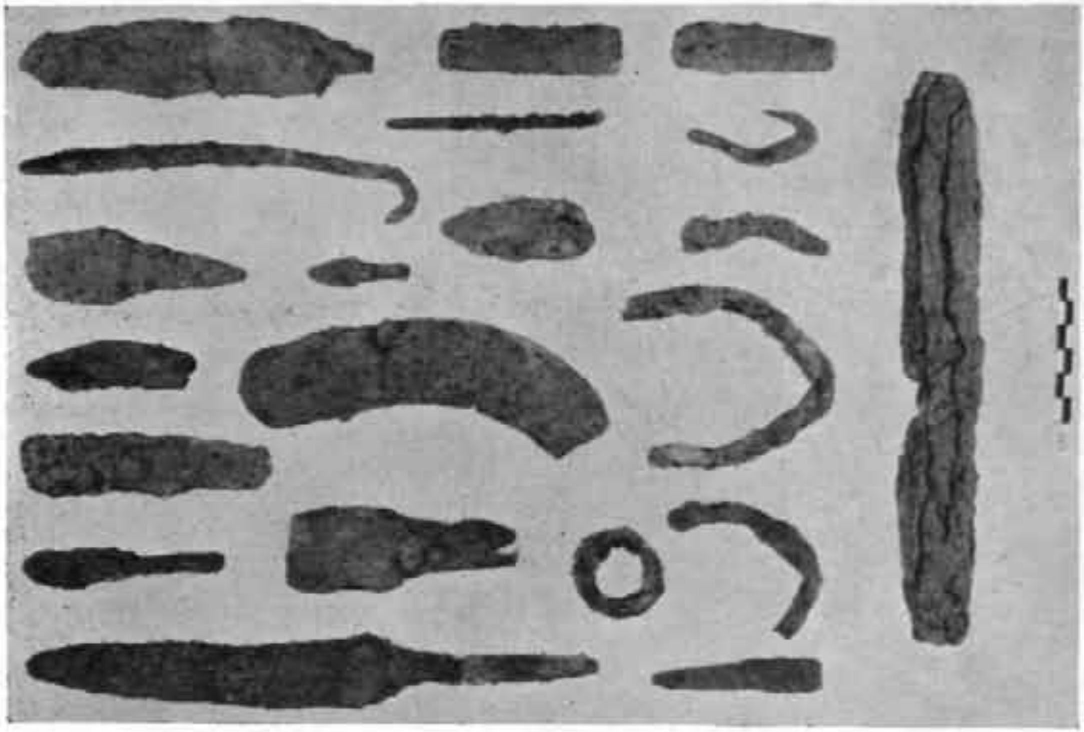
Kalibangan, KLB-2: A, *street corner showing remains of fender-posts at successive levels (Period II)*; B, *a room showing tile-flooring with typically Indus design of intersecting circles.* *See p. 41*



A

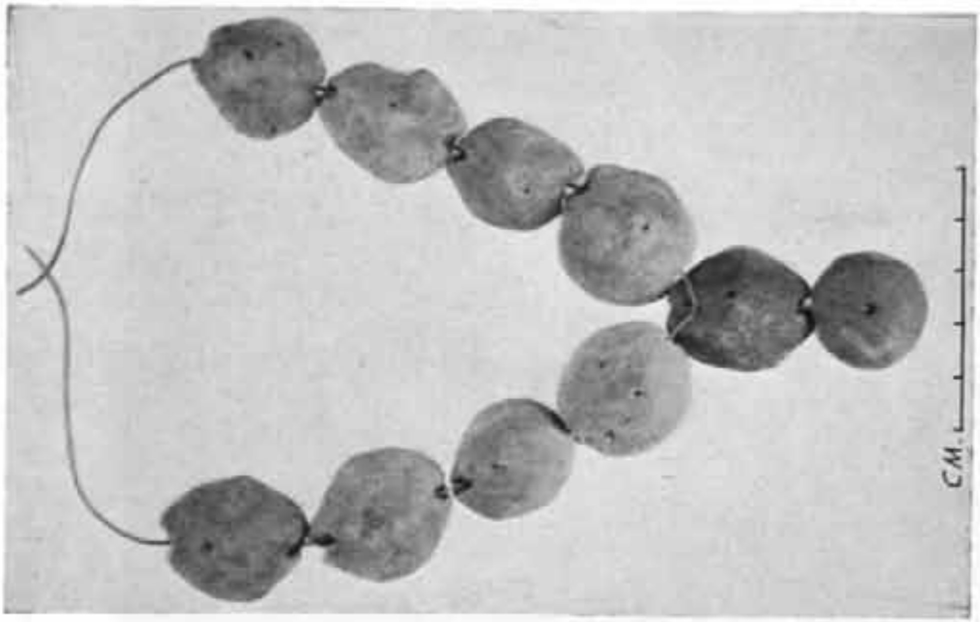


B



C

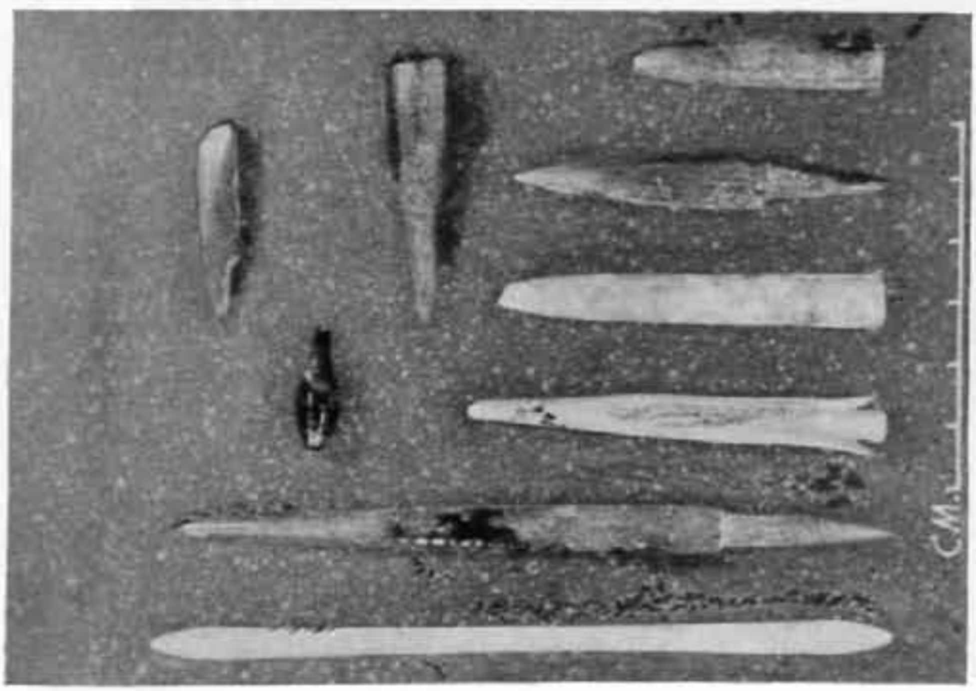
Atranjikhera : A, *cloth impressions on a bowl of Painted Grey Ware, Period III*; B, *comb decorated with engraved circlets, Period III*; C, *iron objects, Period III.* *See pp.* 45 *and* 47



C

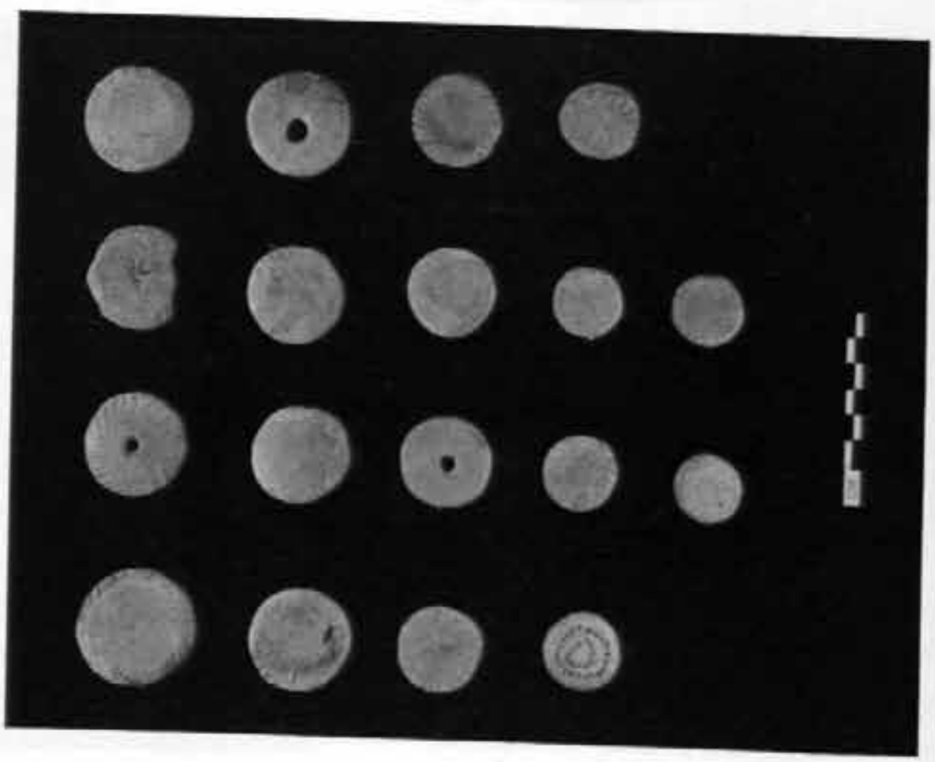


B

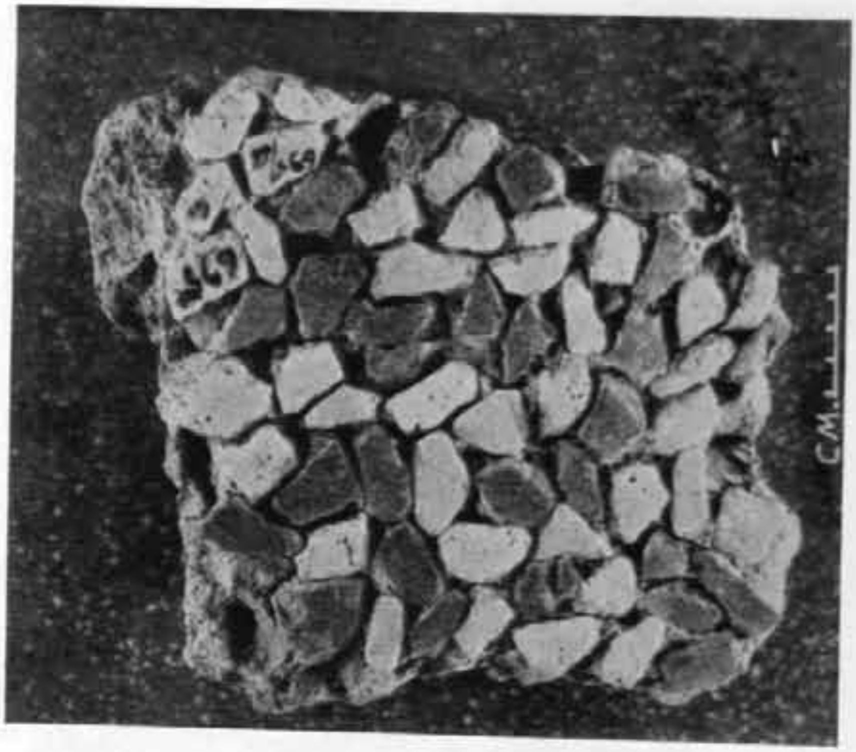


A

Atranjikhera : A, *bone arrowheads, late phase of Period III*; B, *bone arrow-head with iron shaft, late phase of Period III*; C, *terracotta bead necklace, Period III.* *See p. 47*



A

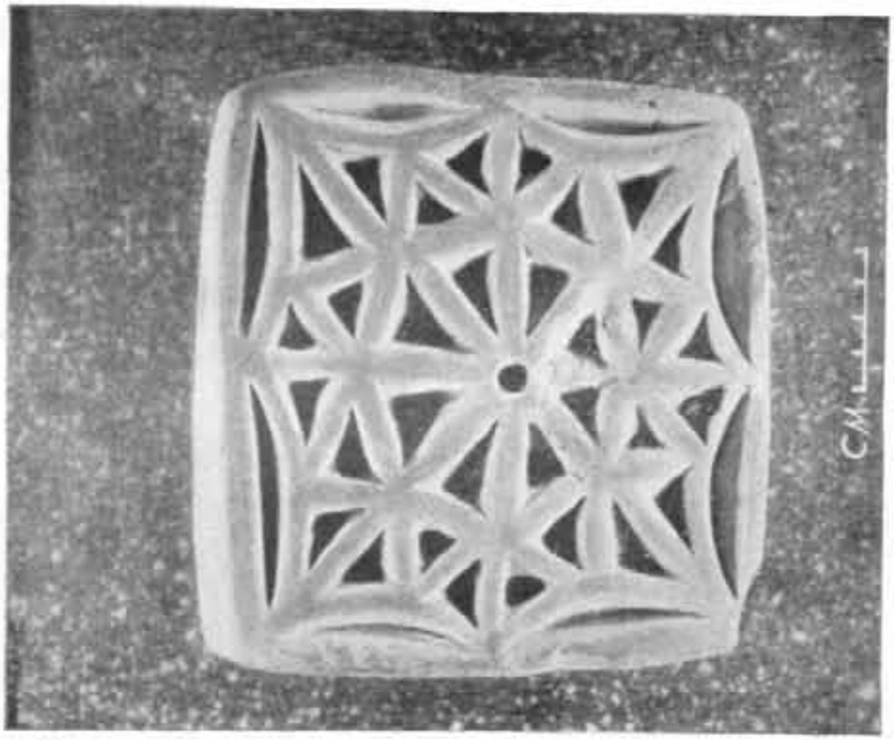


B

Atranjikhera: A, *terracotta discs, Period III;* B, *fragment of a mosaic, Period IV.* *See p. 47*



A

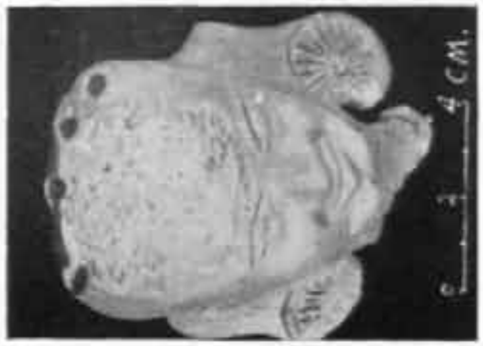


B

Atranjikhera: A, house floors with hearths, Period IV; B, terracotta printing block, Period IV. *See p. 47*



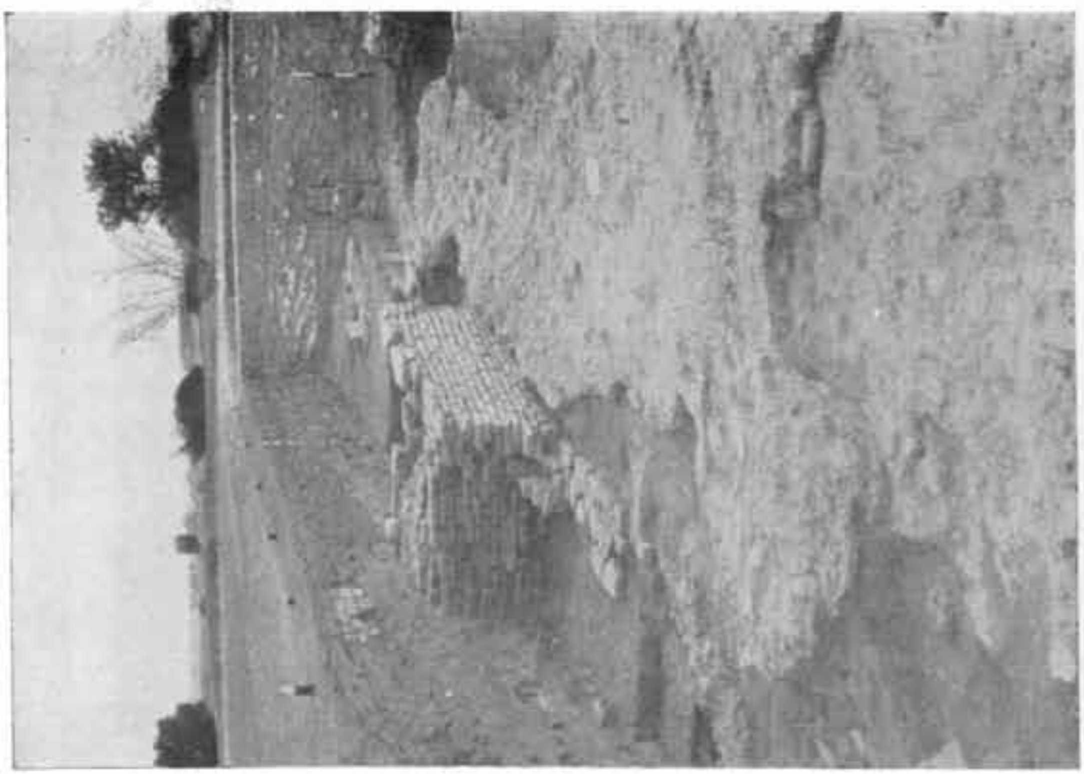
B



D

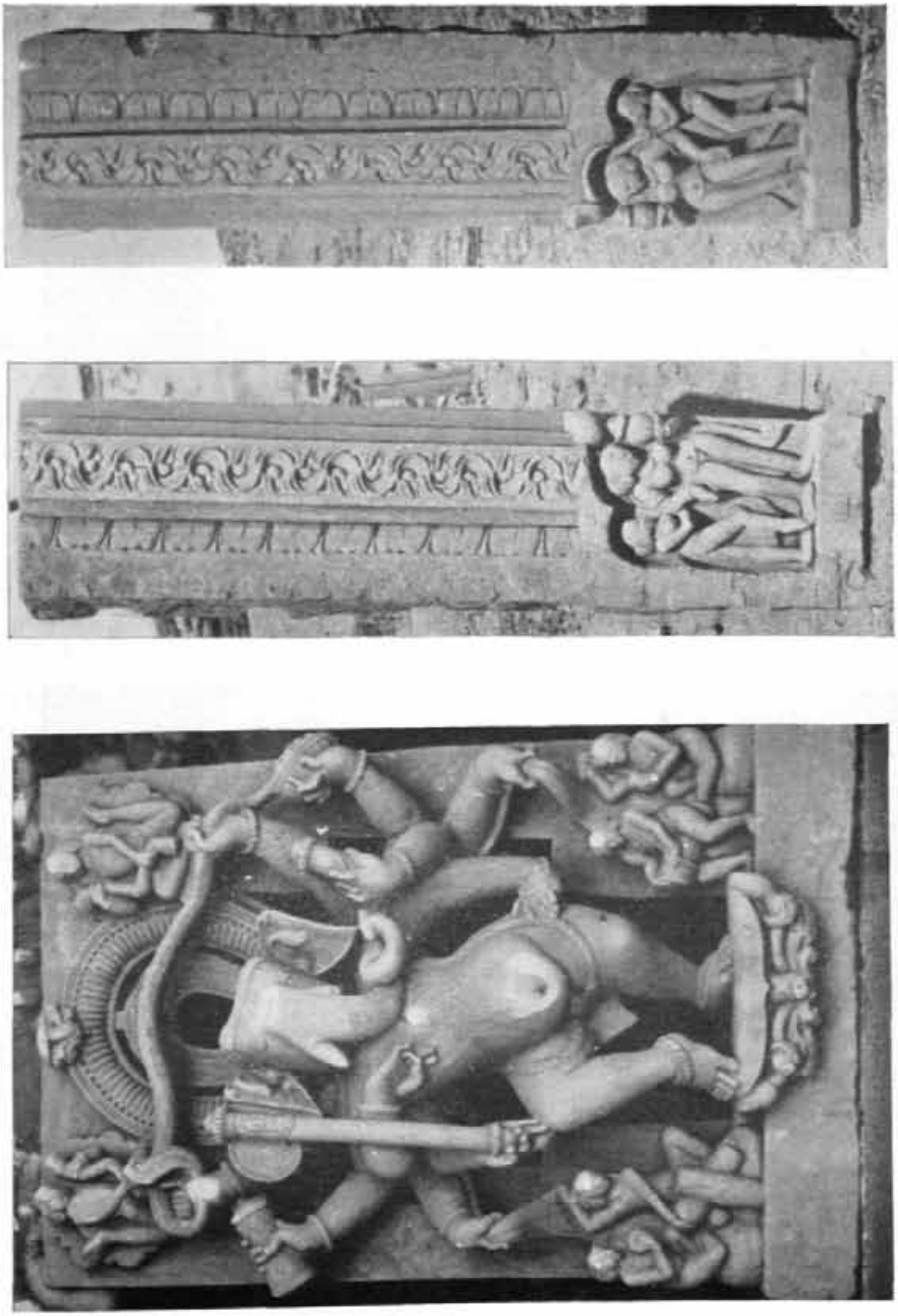


C



A

Masaon: A, *brick wall and pavement on the southern slope of the mound, Period III*; B, *hone or pestle of unbaked clay with stone chips fixed in a mosaic pattern, Period IB*; C, *terracotta female figurine, Period III*; D, *terracotta female figurine with a smiling face, Period III*. *See pp. 51 and 52*



C

B

A

Burogaon : A, *stone image of Ganesa;* B, *and* C, *door-jambs.* *See p. 52*

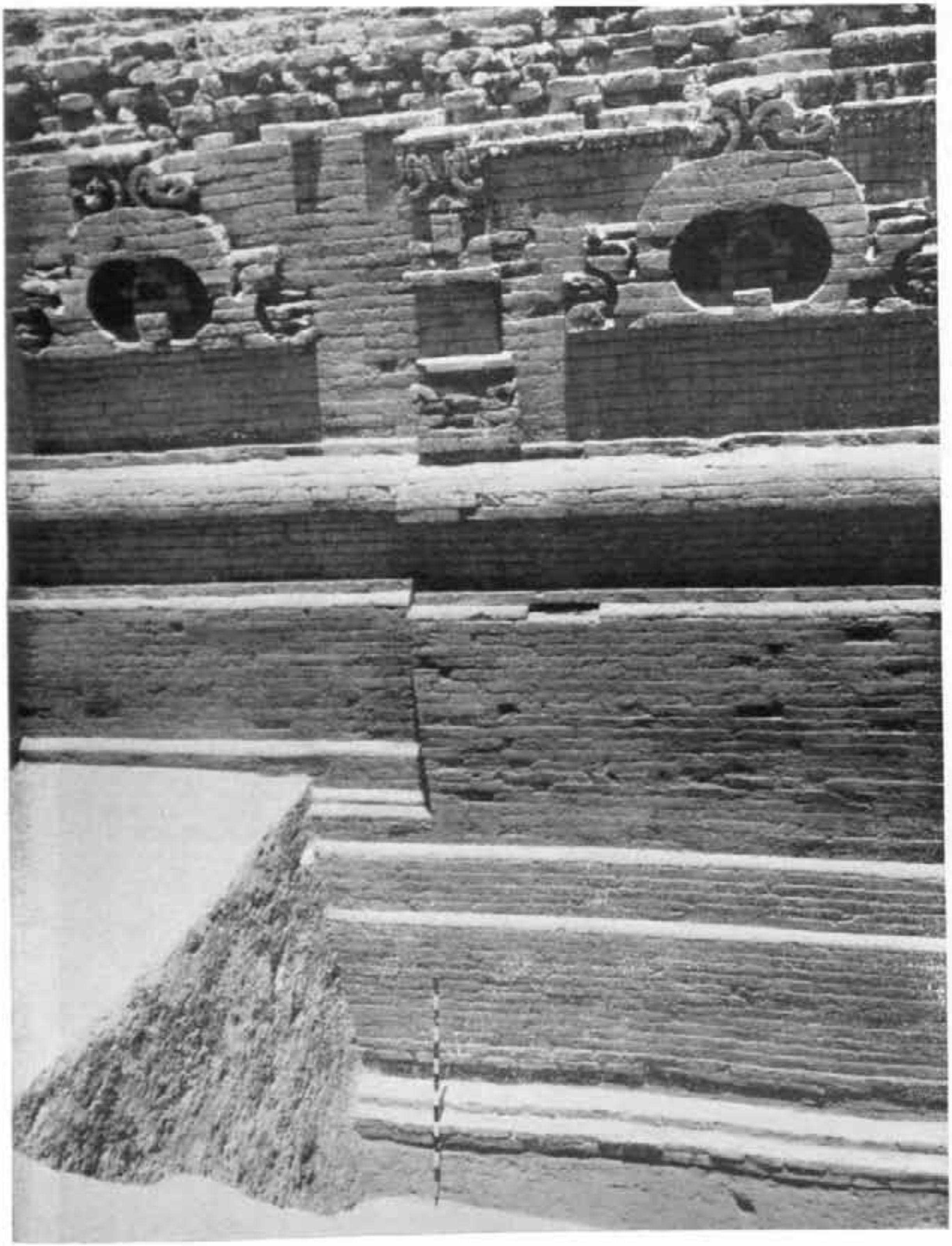


A

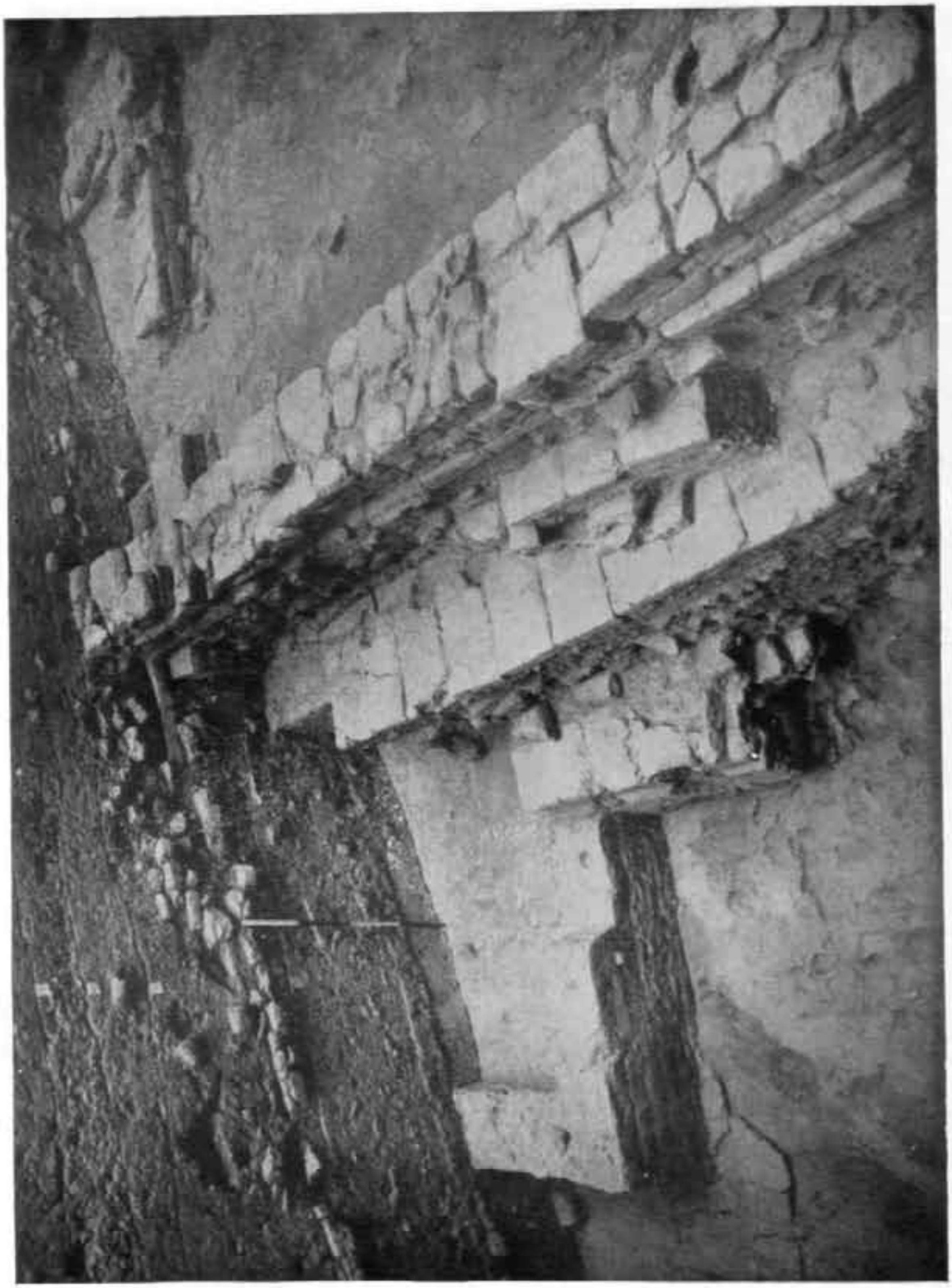


B

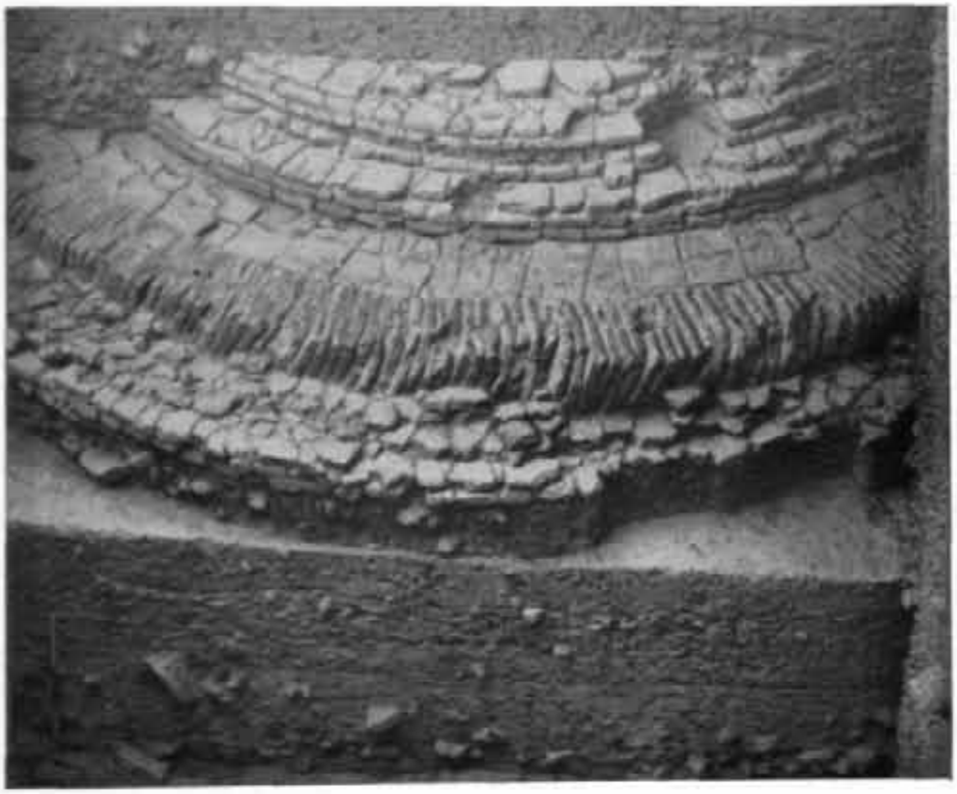
A. *Burogaon: close view of the temple, after excavation;* B. *Kashipur: southern wall of the temple showing mouldings and chaitya windows.* *See pp. 52 and 54*



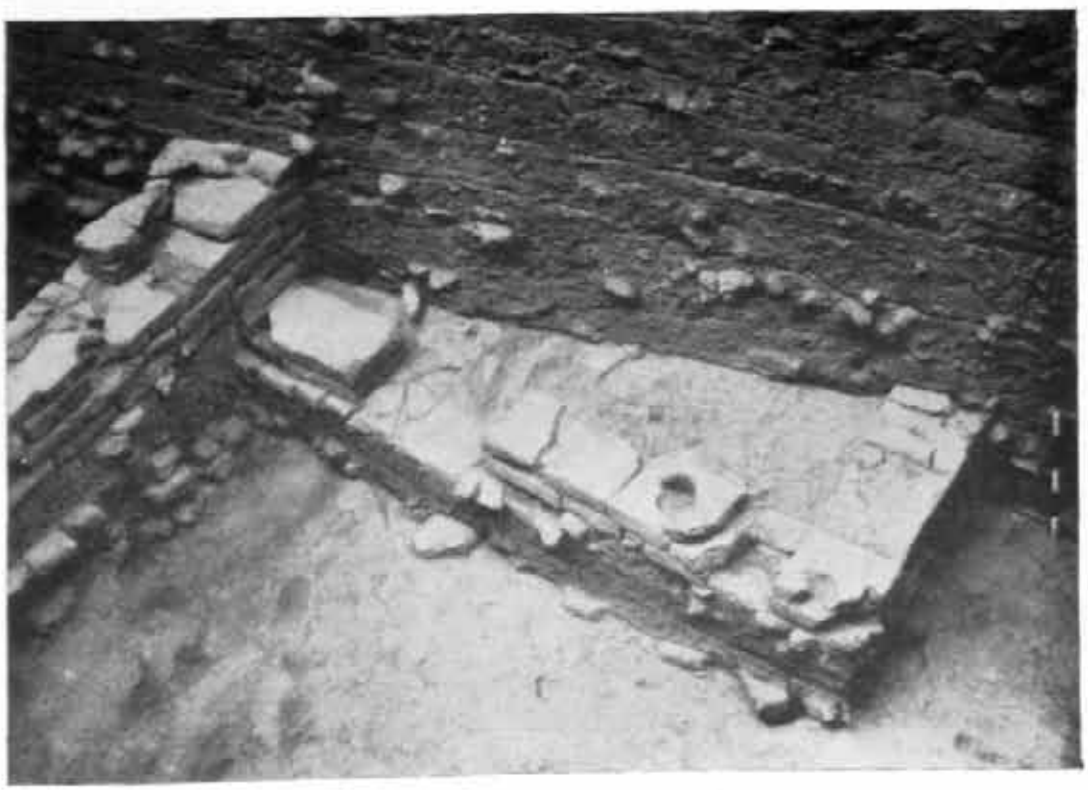
Kashipur: temple wall showing foundation. *See p. 54*



Rajghat: structures of Periods II and III. *See p. 55*



A



B

Rajghat: A, *circular brick platform, Period IV;* B, *part of a room showing an opening and post-holes.* *See p. 55*

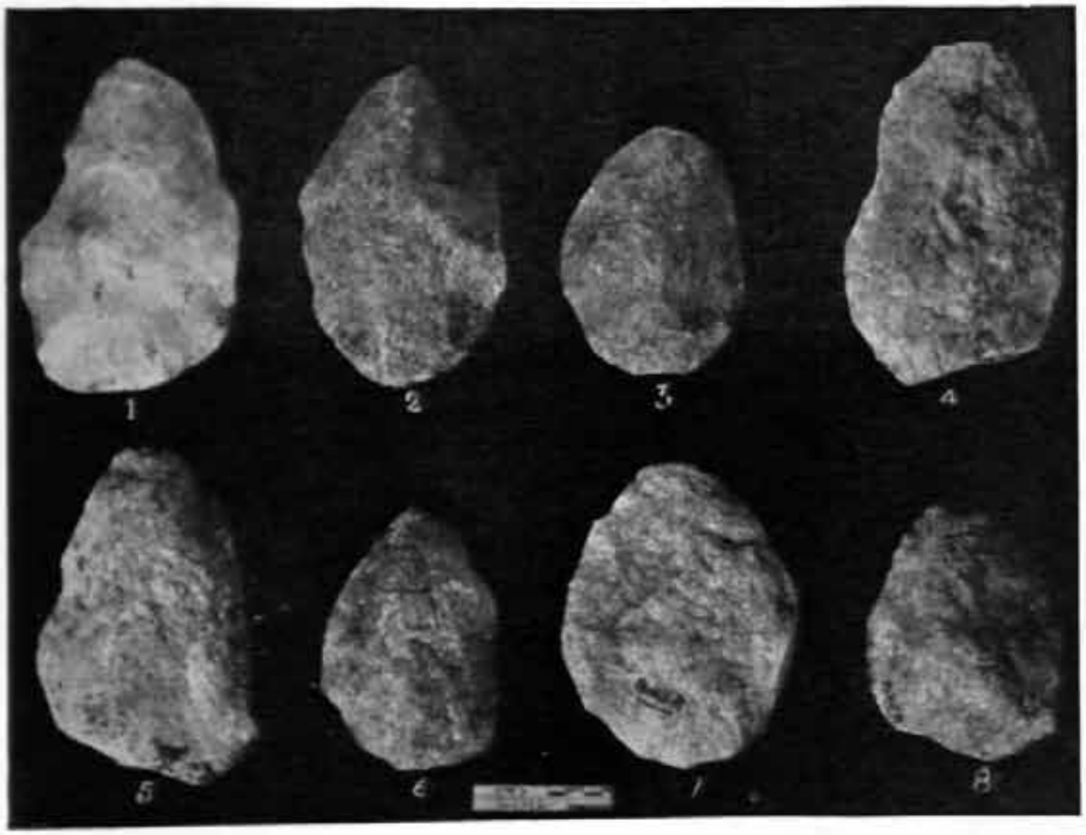


A

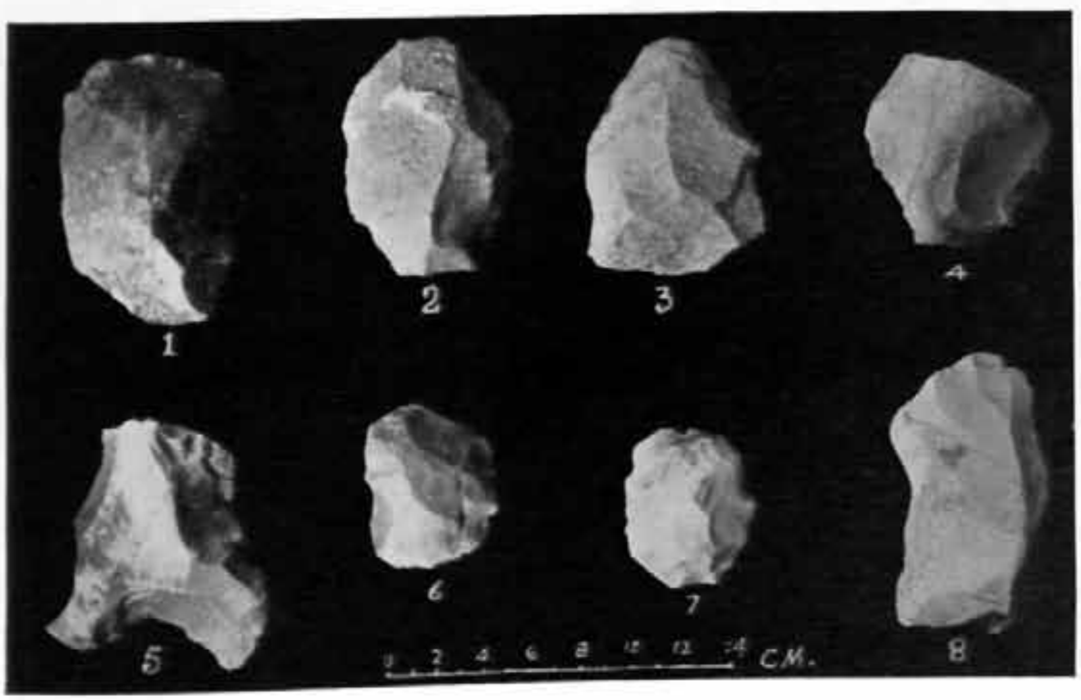


B

A. *Susunia hill: section of the Gandhesvari showing implementiferous gravel;* B. *Purulia: cliff section on the left bank of the Gandhesvari showing implementiferous gravels overlying decomposed sandstone.* *See p. 56*



A

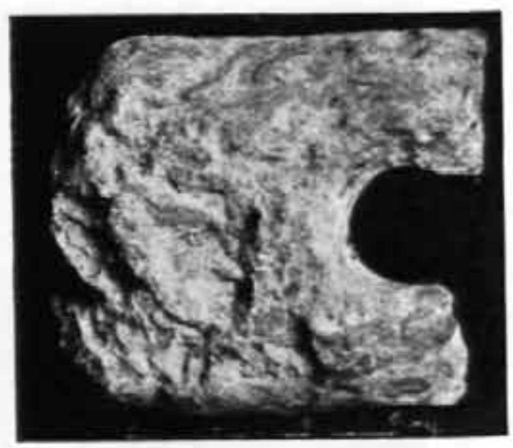


B

A. *Early Stone Age tools from the region around Susunia hill;* B. *Middle Stone Age tools from the region around Susunia hill. See pp. 56 and 57*



B

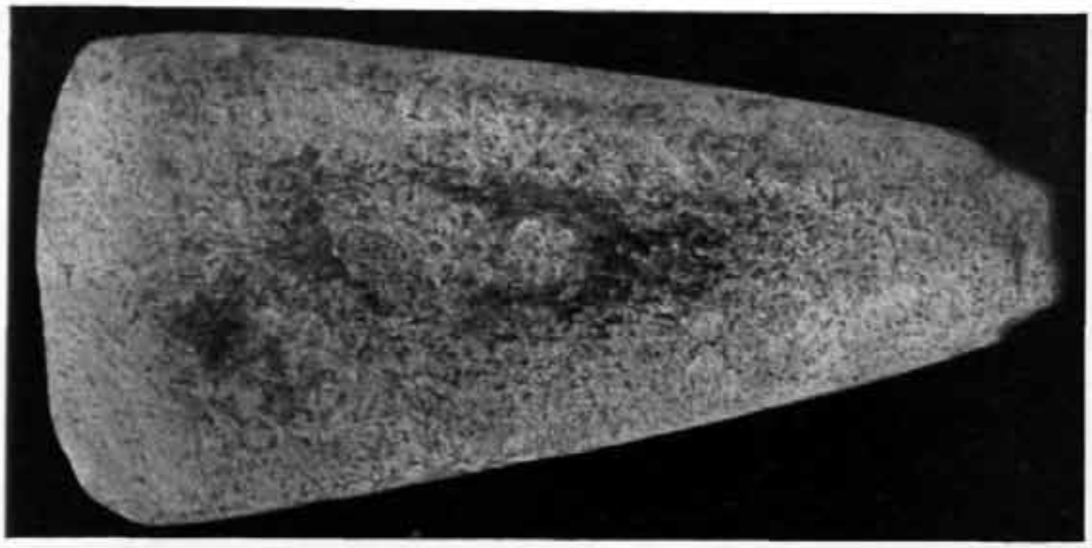


C

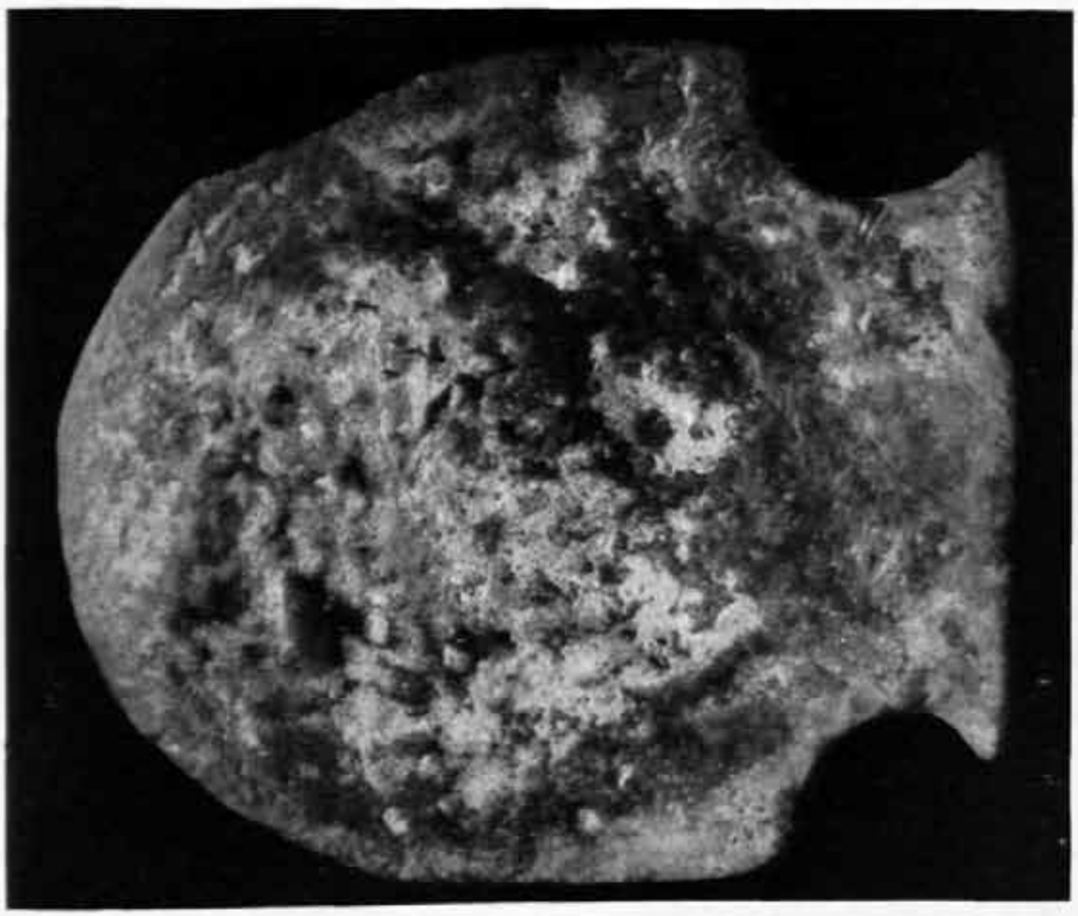


A

A. *Neolithic celts from the region around Susunia hill;* B. *Neolithic macehead from Dhankora;* C. *Neolithic macehead from Simulbaria.* *See p. 57*



A



B

A, *neolithic celt from Bankajor;* B, *Shouldered copper celt from Chatla.* *See pp. 57 and 58*



A



B

Chandraketugarh: A. *Khana-Mihirer Dhipi, eastern face of the outer wall of main temple showing niches and mouldings*; B. *Noongola, terracotta toy-cart showing a demon chewing a cobra, Period II.* *See pp. 59 and 60*



A



B

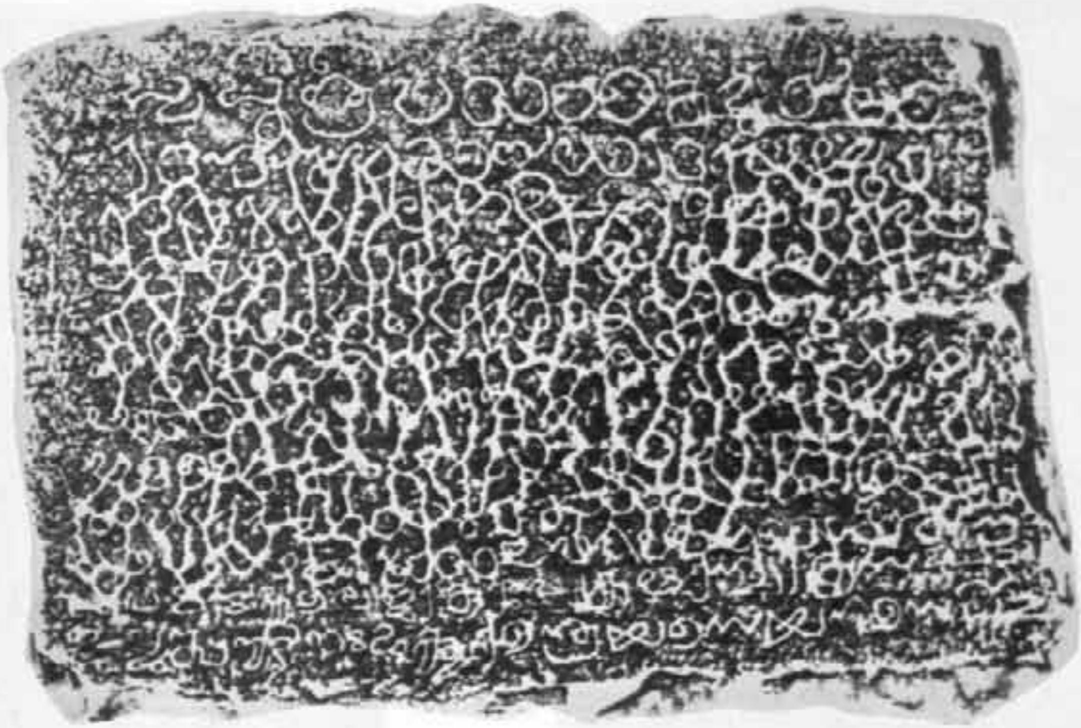


C

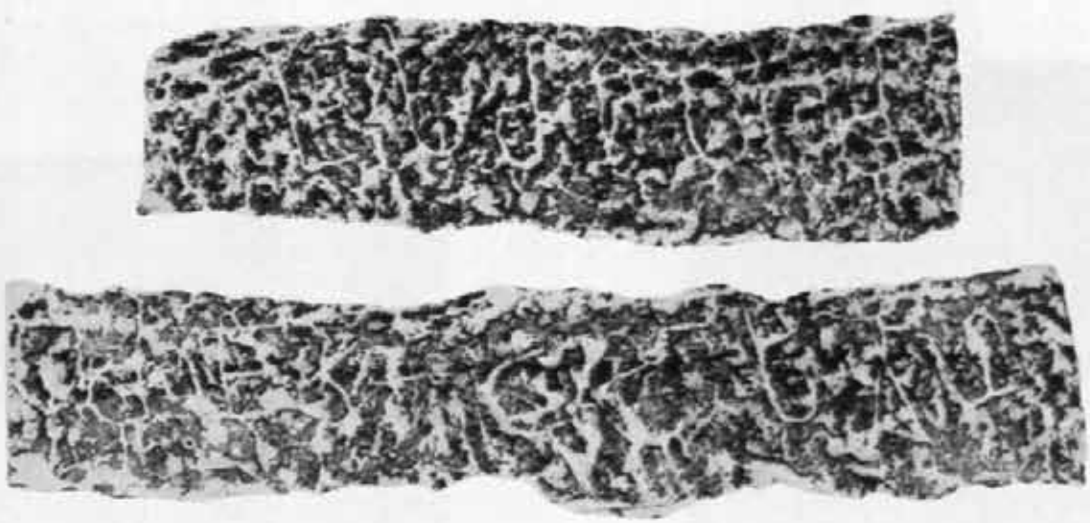


D

Chandraketugarh : A. *Itakhola, terracotta plaque, Period II* ; B. *Hadipur, terracotta plaque showing a female figurine holding a pair of fish, Period III;* C. *Itakhola, terracotta plaque showing deer-hunt, Period II* ; D. *Itakhola, terracotta plaque showing a winged female figurine, Period II.* *See pp. 59 and 60*



A

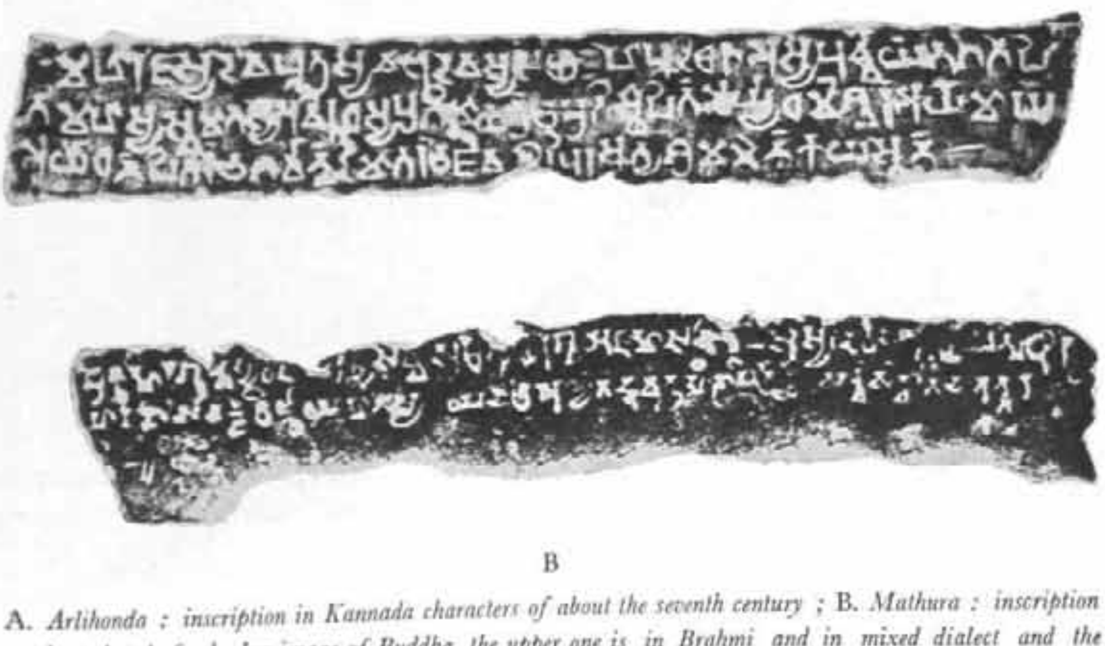


B

A. *Vellur : inscription in Tamil language and Vatteluttu characters referring to the construction of an ambalam* ; B. *Tiruvadavur : inscription in Tamil language and in Brahmi characters of circa third-second century B. C.* *See pp. 62 and 63*



A



B

A. *Arlihonda : inscription in Kannada characters of about the seventh century* ; B. *Mathura : inscription on the pedestal of a broken image of Buddha, the upper one is in Brahmi and in mixed dialect and the lower one is in Sanskrit. See pp. 65 and 68*

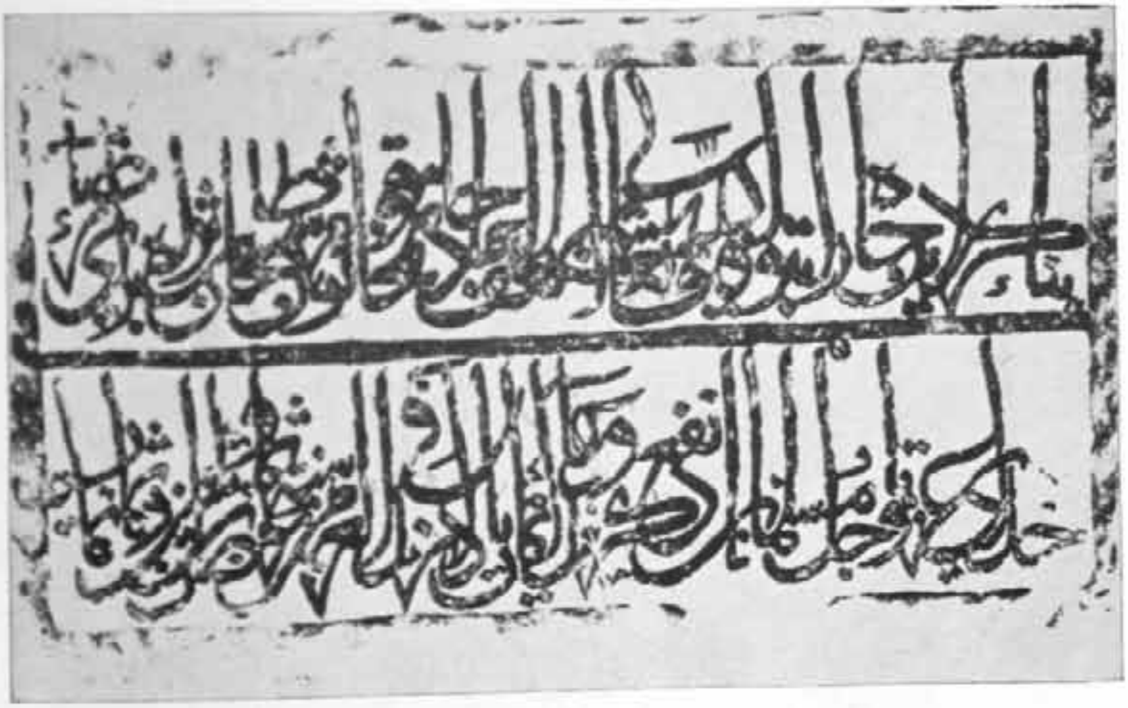


A



B

A. *Chanderi : inscription recording the construction of a mosque in A. H. 818 (A. D. 1416) by Timur ;*
B. *Bahroj : inscription recording the construction of a step-well in A. H. 846 (A. D. 1442) by Muhammad Shah.* *See pp. 70 and 72*

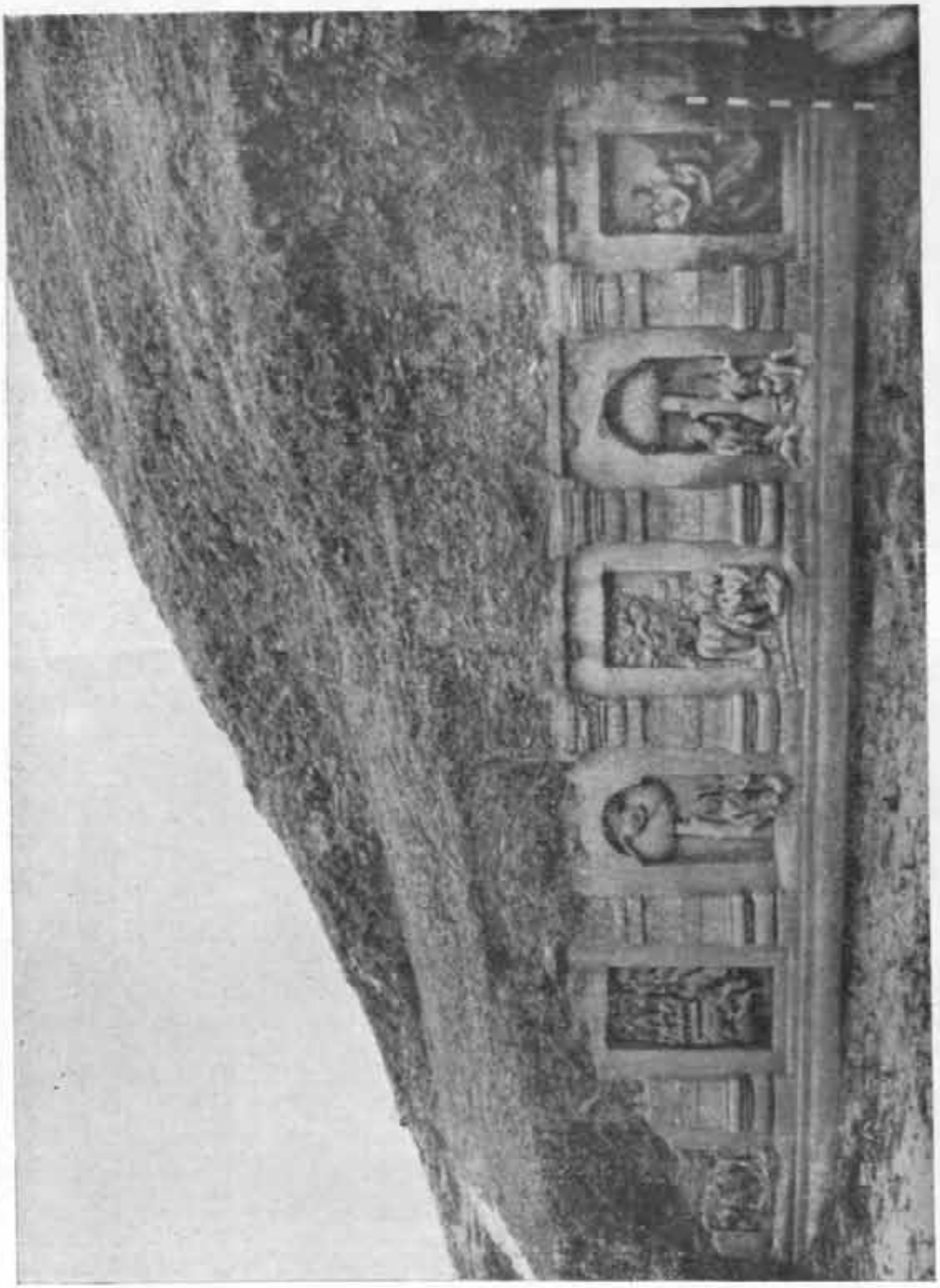


A

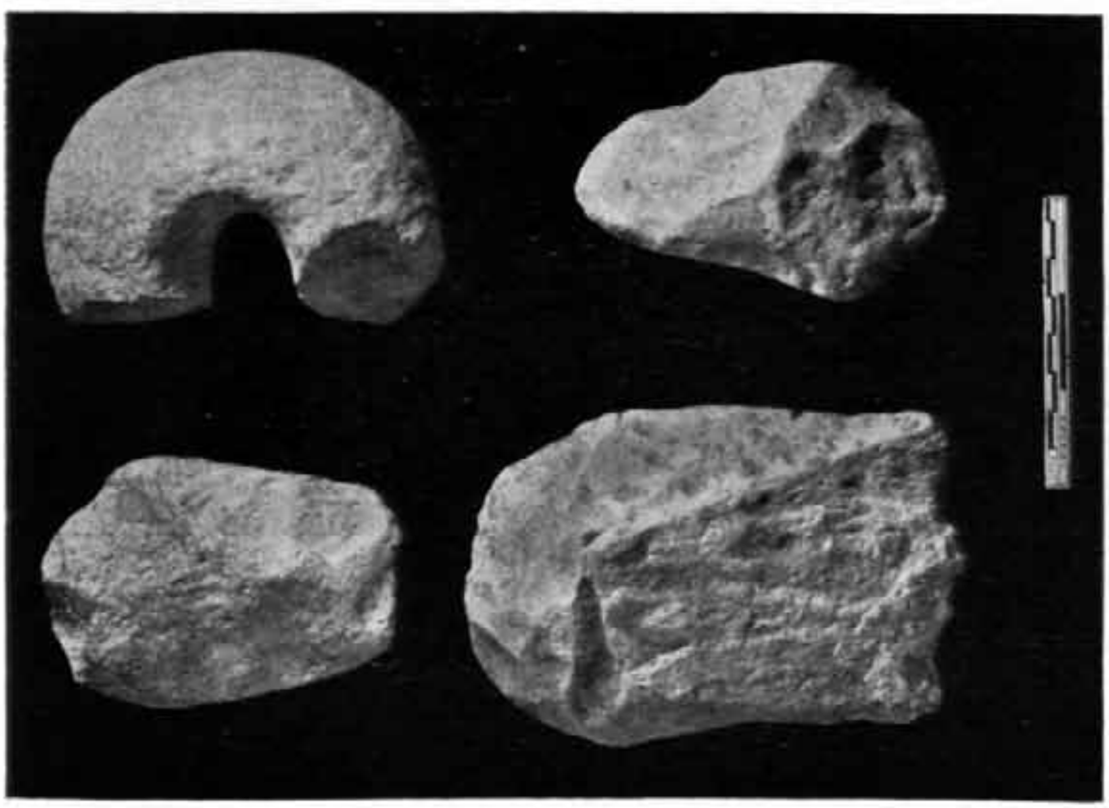


B

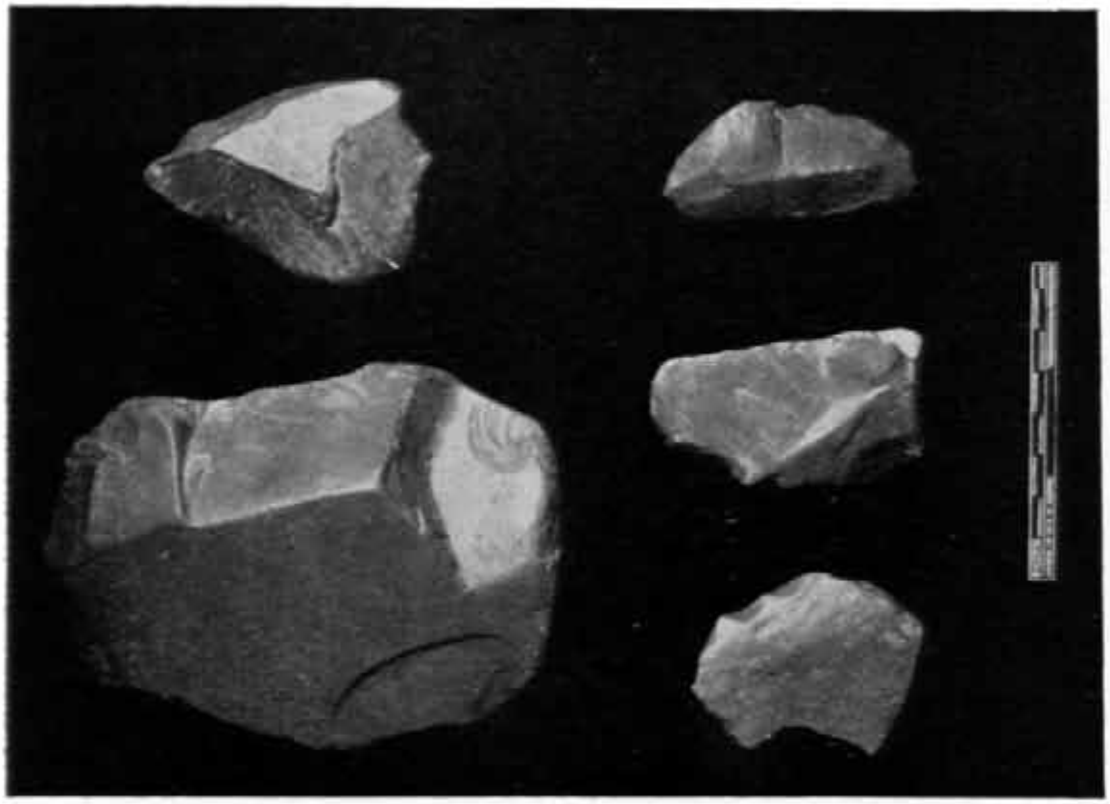
Nagaur : A, *inscription mentioning Hatim Khatun, wife of Shams Khan Nagauri* ; B, *fragmentary record of Muhammad bin Sam.* *See p. 73*



Aphsad : view showing the plinth of the brick temple with stucco reliefs in the niches. *See p. 79*

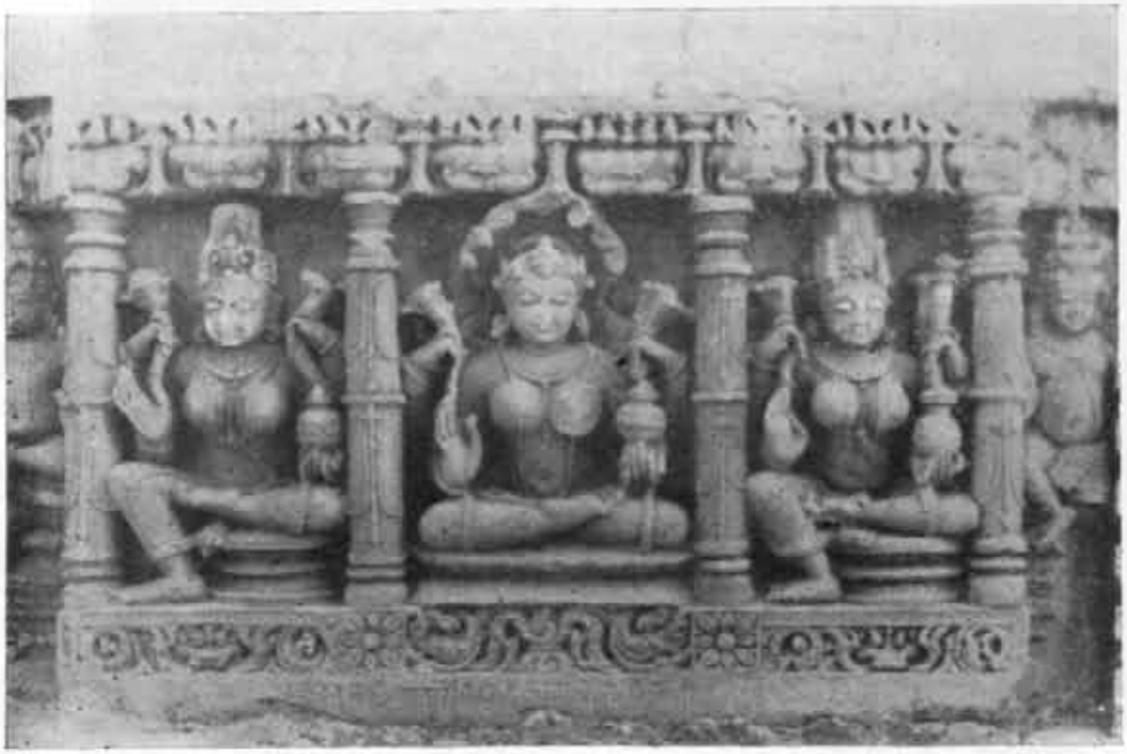


A



B

A. *Nagar Haveli : Early Stone Age and neolithic tools from the Daman-Ganga* ; B. *Padam Tekri : Middle Stone Age tools.* *See p. 80*



A



B

A. *Tewar : stele showing Nagi with other deities and an inscription of eleventh century on the pedestal;*
B. *Tambur : ashtamatrika panel.* *See pp. 81 and 82*



Marwar-Balia : early medieval temple. *See p. 83*



A



B

Museum and Picture Gallery, Baroda : A, *show-case displaying Gandhara art ; and* B, *wooden trellis window showing intricate carvings.* *See p. 94*



A



B

Prince of Wales Museum, Bombay : A, *Vishnu from Jondhali–Baug, ht. 125 cm. ; and* B, *bronze Buddha from Kashmir, circa tenth century, ht. 20·5 cm.* *See pp. 95 and 96*



State Archaeological Gallery, Calcutta : letter addressed to Raja Gurudas, son of Maharaja Nandakumar, by Warren Hastings. *See p. 97*

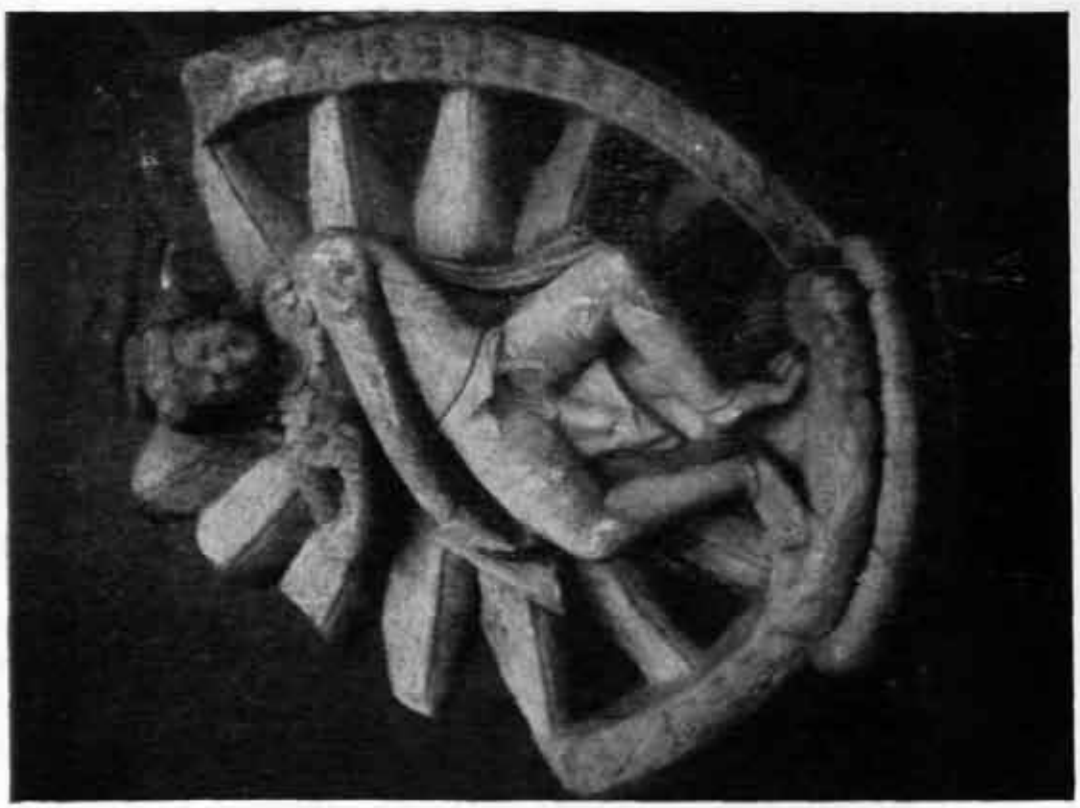


A



B

A. *Museum of Archaeology, Mathura : terracotta mother-goddess, circa second century B. C.* ; B. *National Museum, New Delhi : bronze Karttikeya, circa sixth century.* *See pp. 100 and 101*



A



B

Patna Museum, Patna: A, *sculpture showing a dance pose ; and* B, *Bodhisattva, early Pala period, from Maharaman.* *See p. 102*



A



B

A. *Archaeological Museum, Nagarjunakonda: key gallery displaying show-cases relating to prehistoric and protohistoric objects;* B. *Archaeological Museum, Sanchi: view of the newly-arranged gallery.*
See pp. 101 and 102

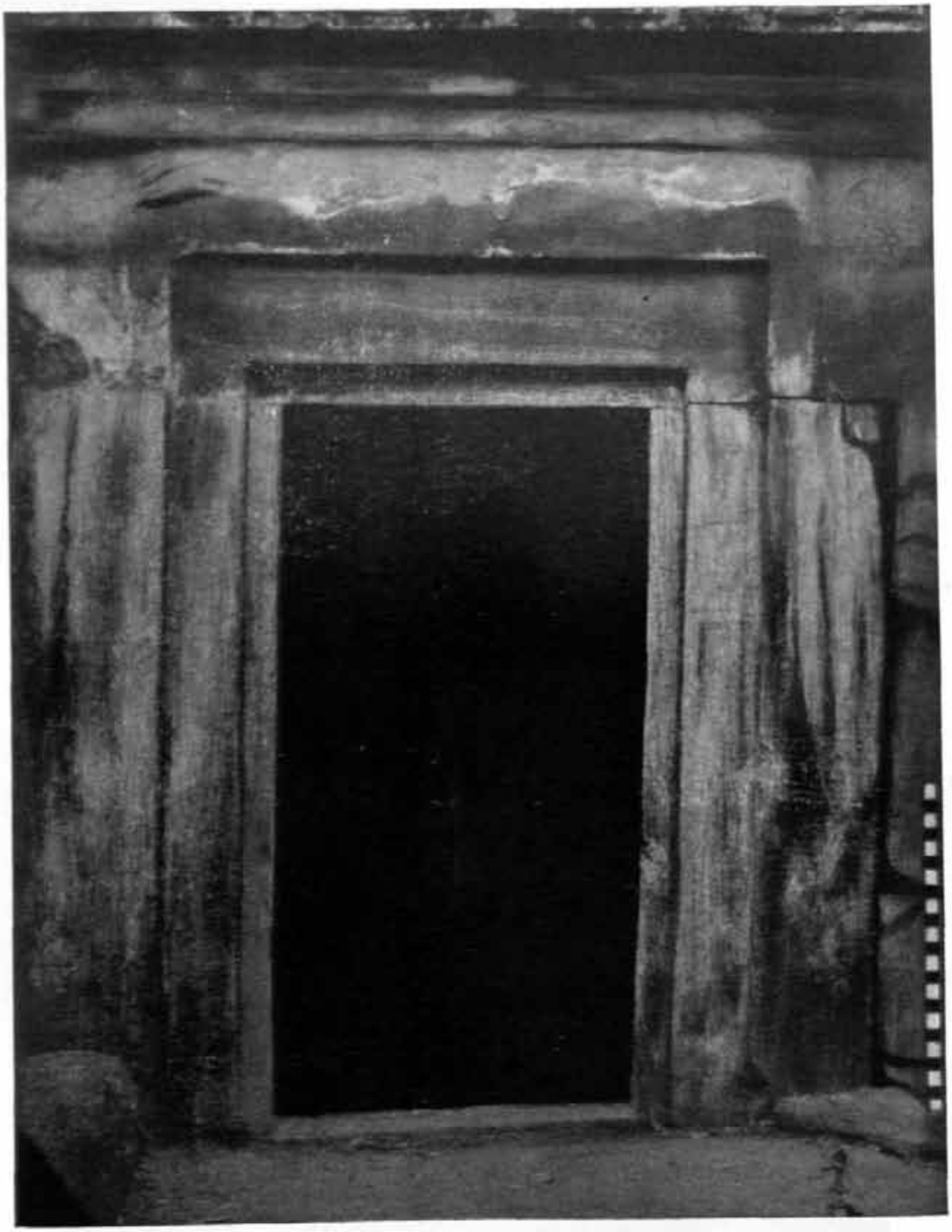


A



B

Kunda, Sankar-madha: A, *general view of the temple;* B, *roof-slabs of the temple.* *See p. 104*



Kunda, Sankar-madha: door-jamb. *See p. 104*



A

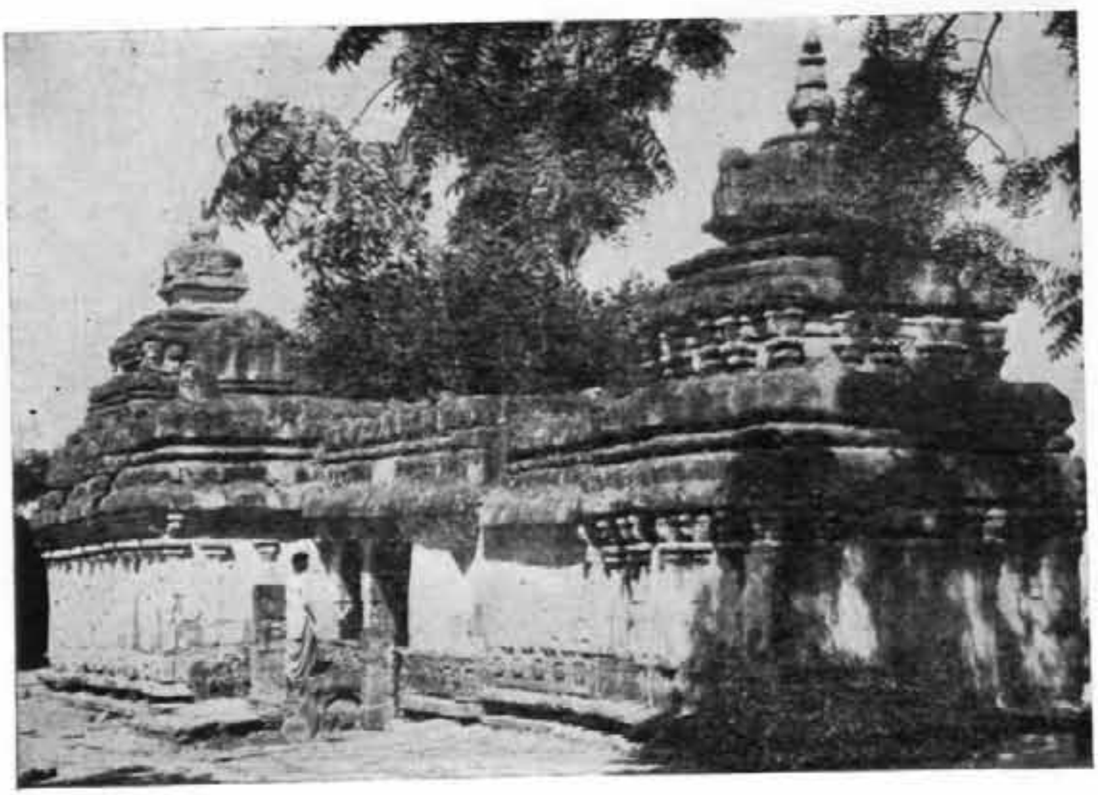


B

A. *Sandur: Parvati temple, general view;* B. *Aravelam, Goa: rock-cut cave.* *See p. 106*



A

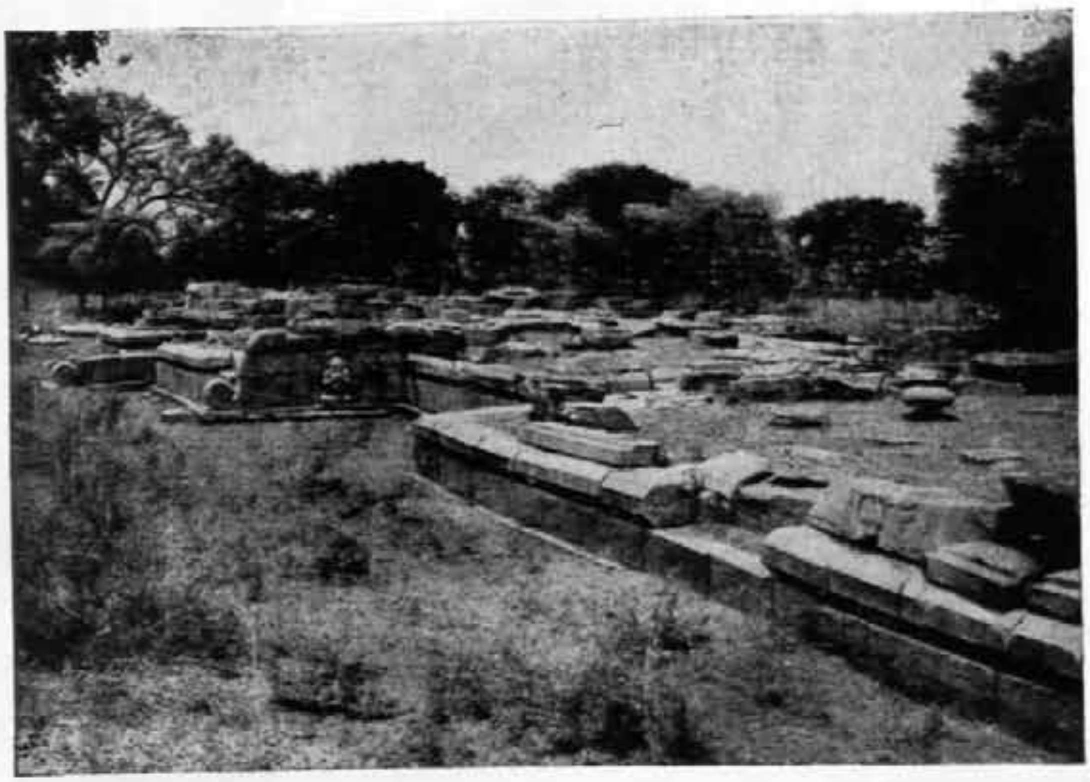


B

Hallur: A. *Melgudi Jaina temple, general view*; B. *Visvesvaragudi temple, general view*. *See p. 106*



A



B

A. *Mahur: Panduleni cave, general view*; B. *Kodumbalur: Aivarkovil, general view.* See pp. 106 and 107



Ukkirankottai : general view of the main temple. *See p. 107*



A

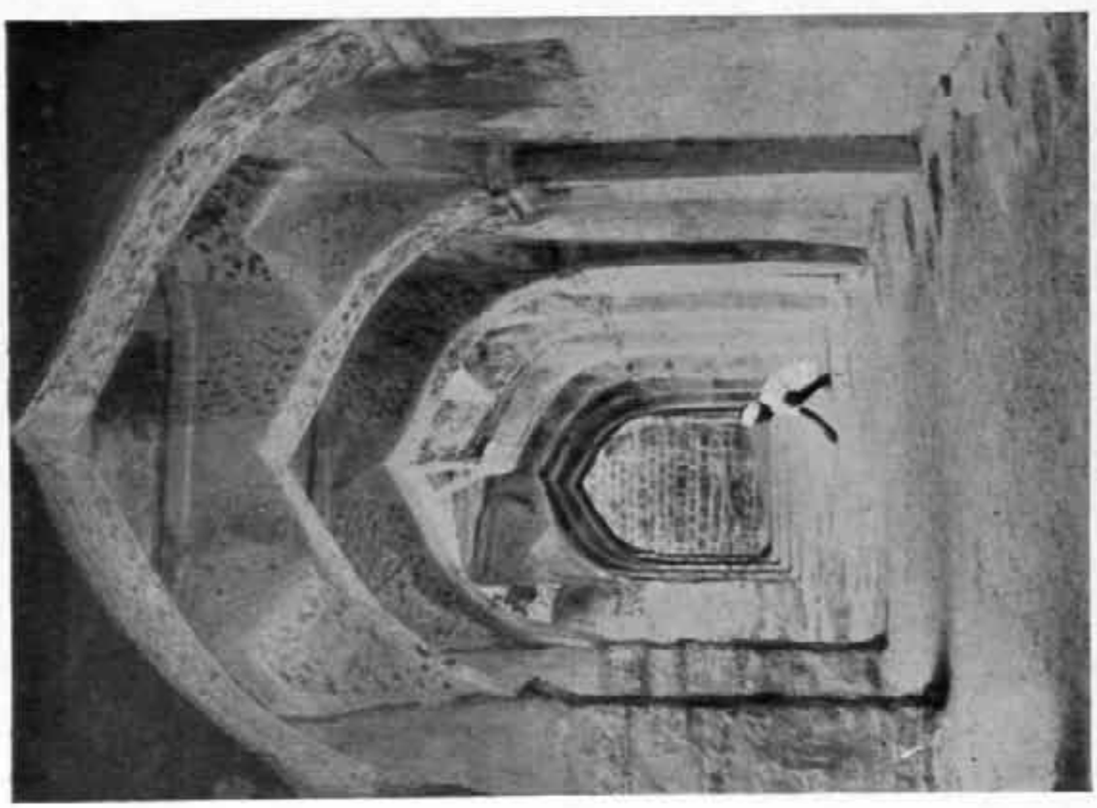


B

Khuni Darwaza, Chanderi: A, *before, and* B, *after conservation.* *See p. 110*



B

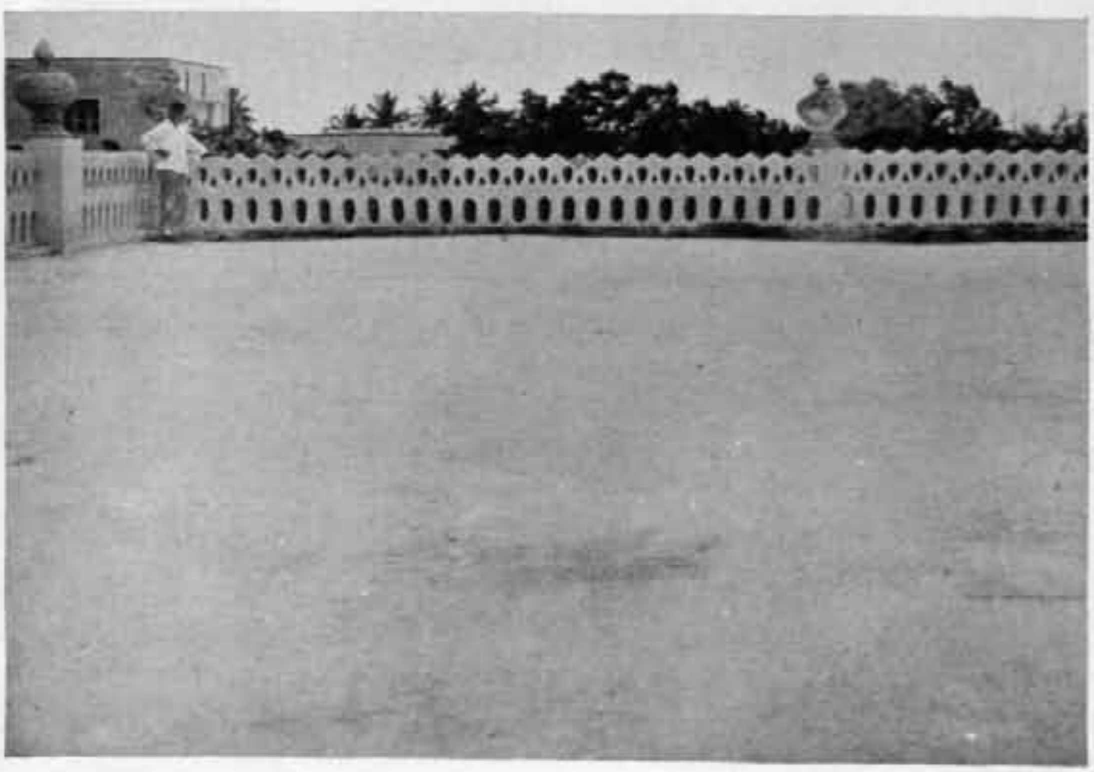


A

Kalyana Mahal, Gingee : flooring of north corridor, A, *before, and* B, *after conservation.* *See p. 120*

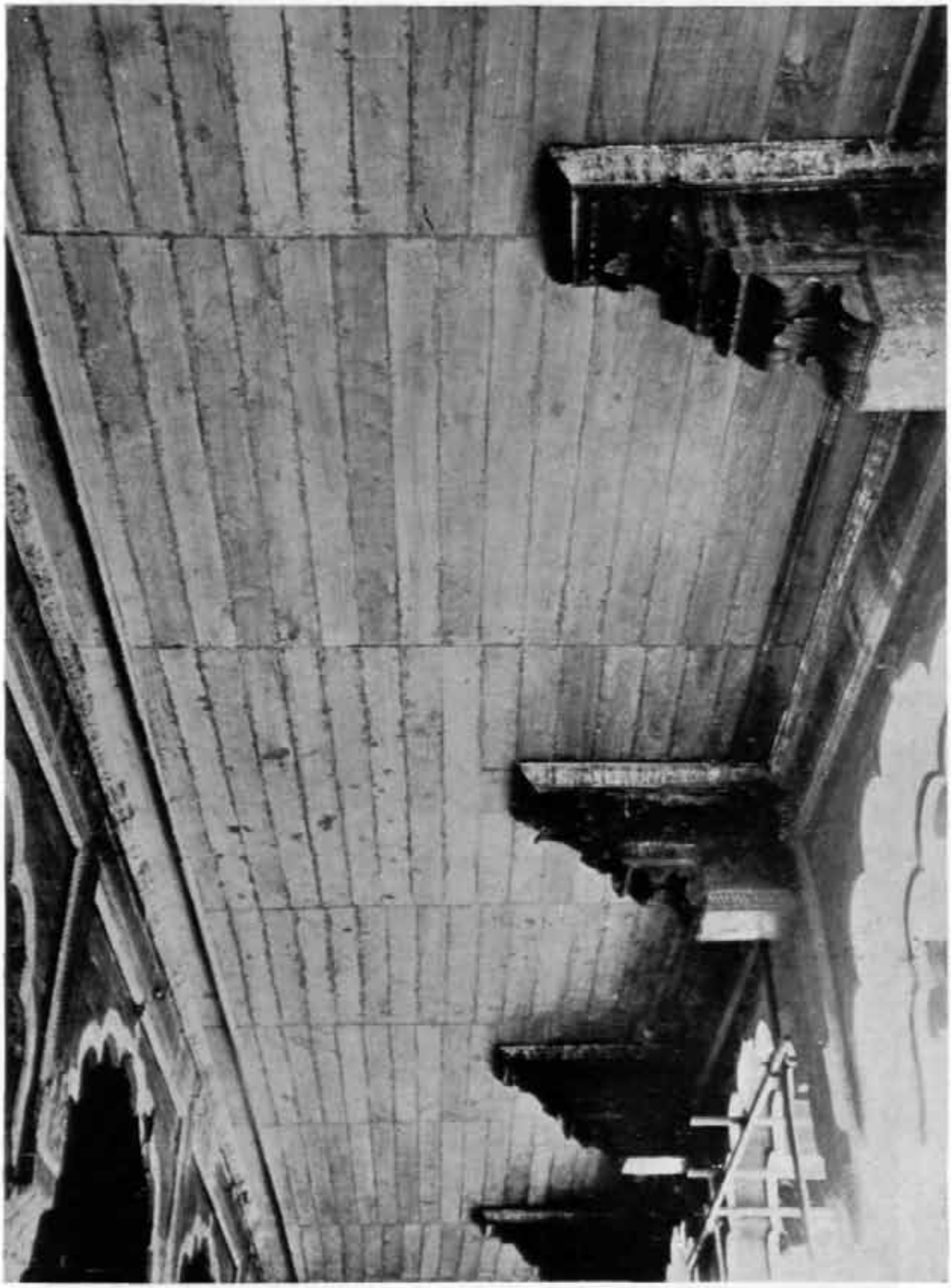


A

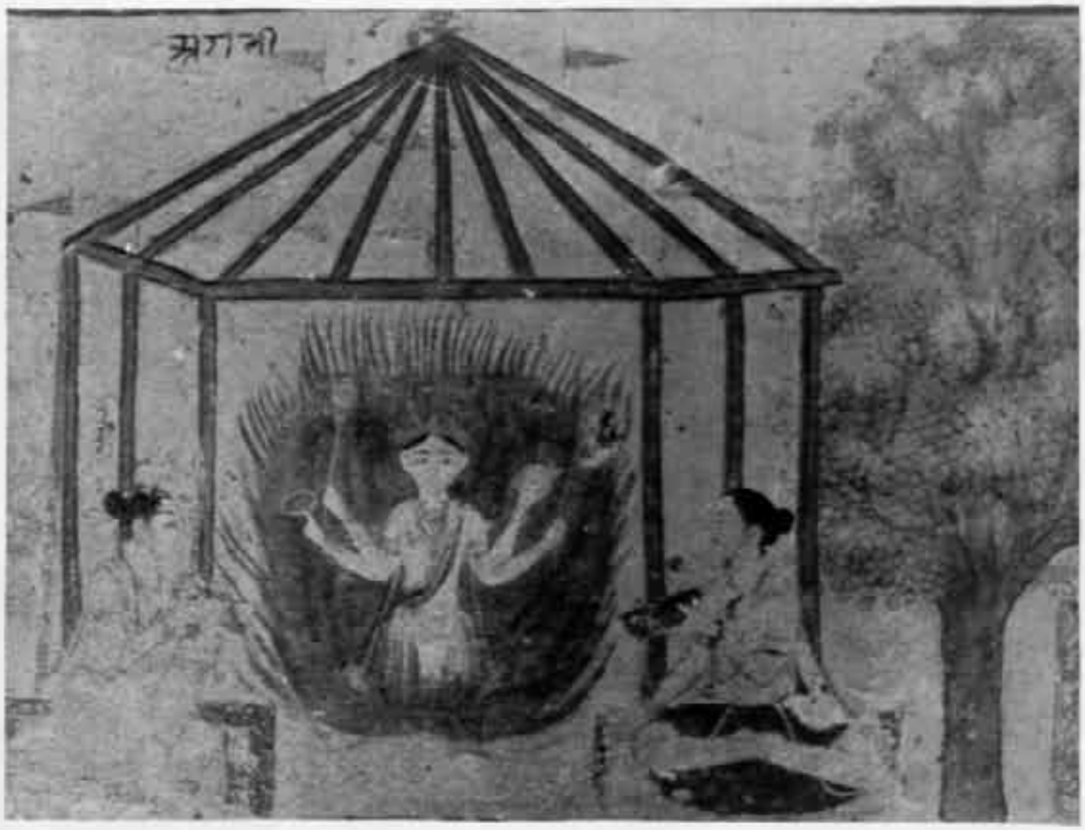


B

Tipu Sultan's palace, Bangalore : terrace-work, A, *during, and* B, *after conservation.* *See p.120*



Tipu Sultan's palace, Bangalore : portion of ceiling, after conservation. *See p. 120*



A



B

Brajaraja Bihari temple, Nurpur : mural painting, A, *before, and* B, *after chemical treatment.* *See p. 126*

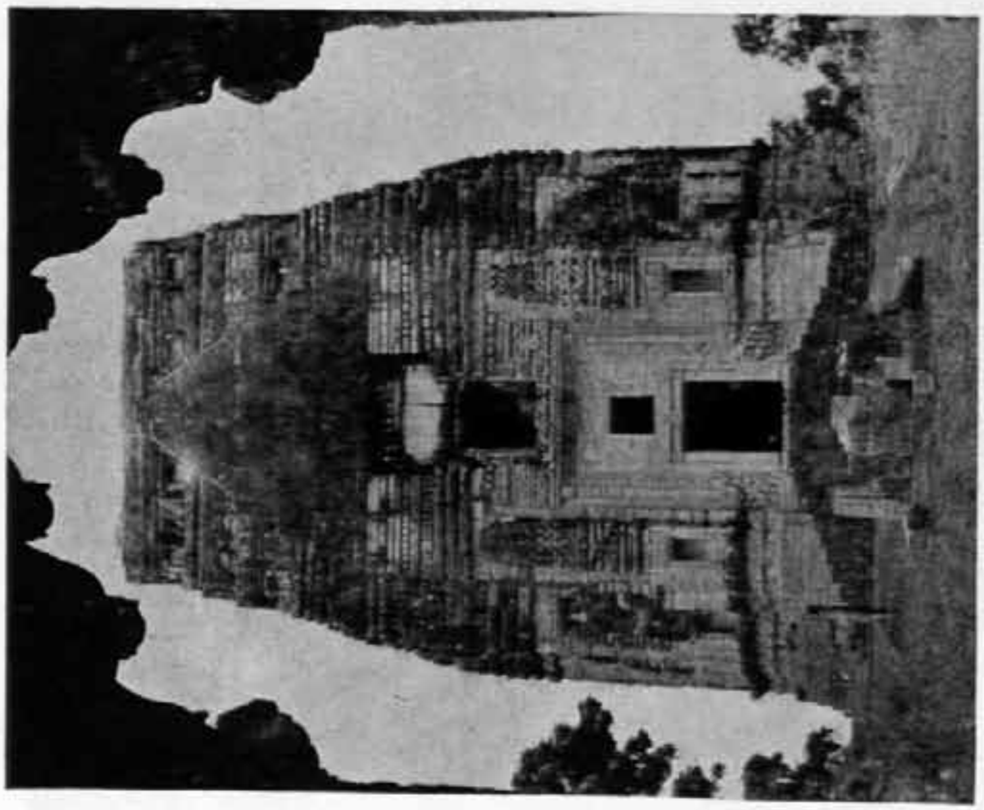


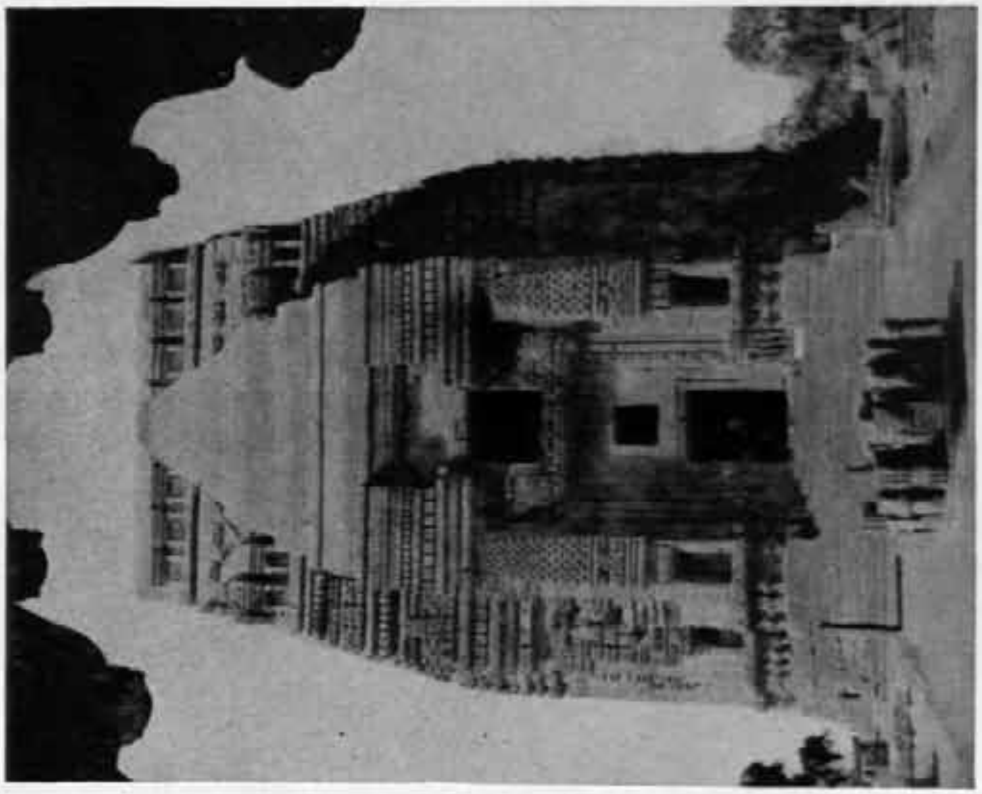
A



B

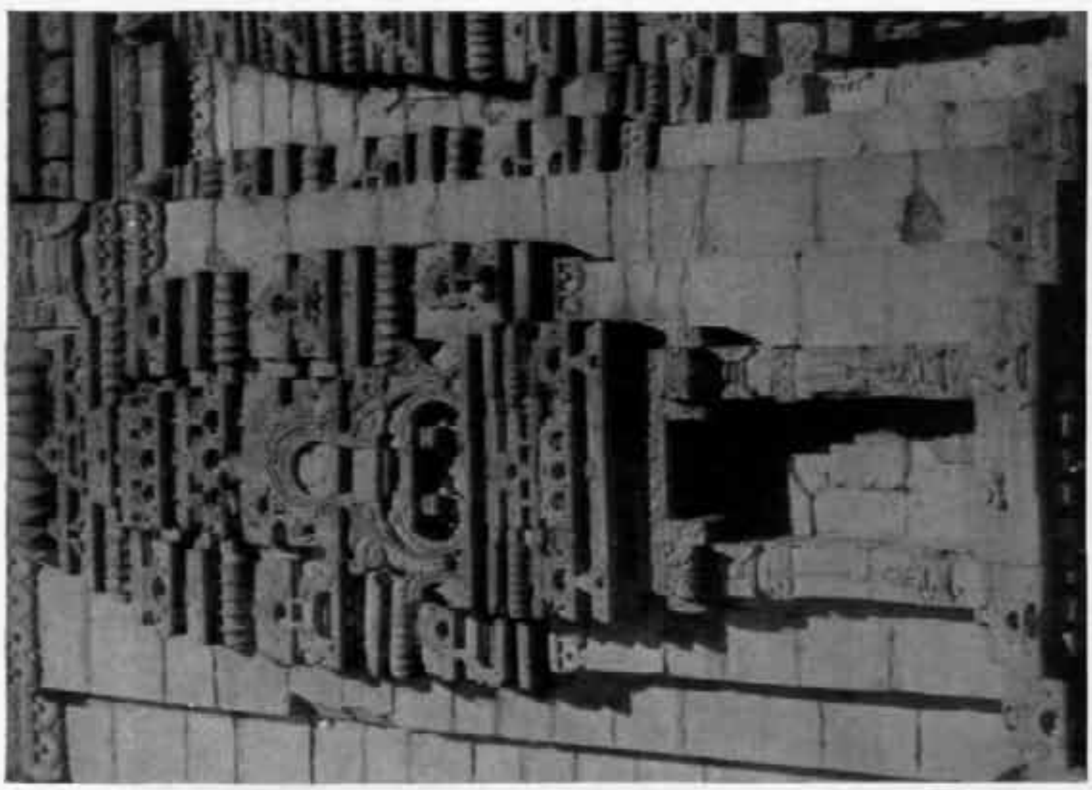
Brajraja Bihari temple, Nurpur : mural painting, A, *before, and* B, *after chemical treatment.* *See p. 126*



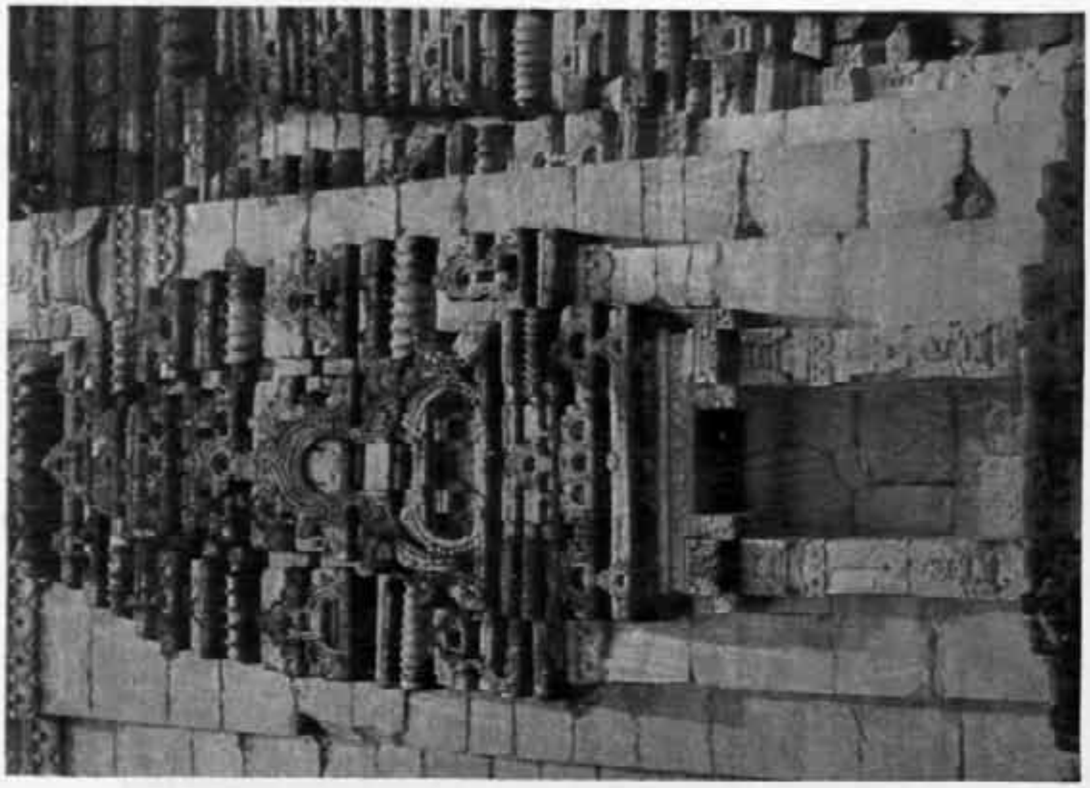


A B

Teli-ka-Mandir, Gwalior: A, before, and B, after treatment. See p. 126

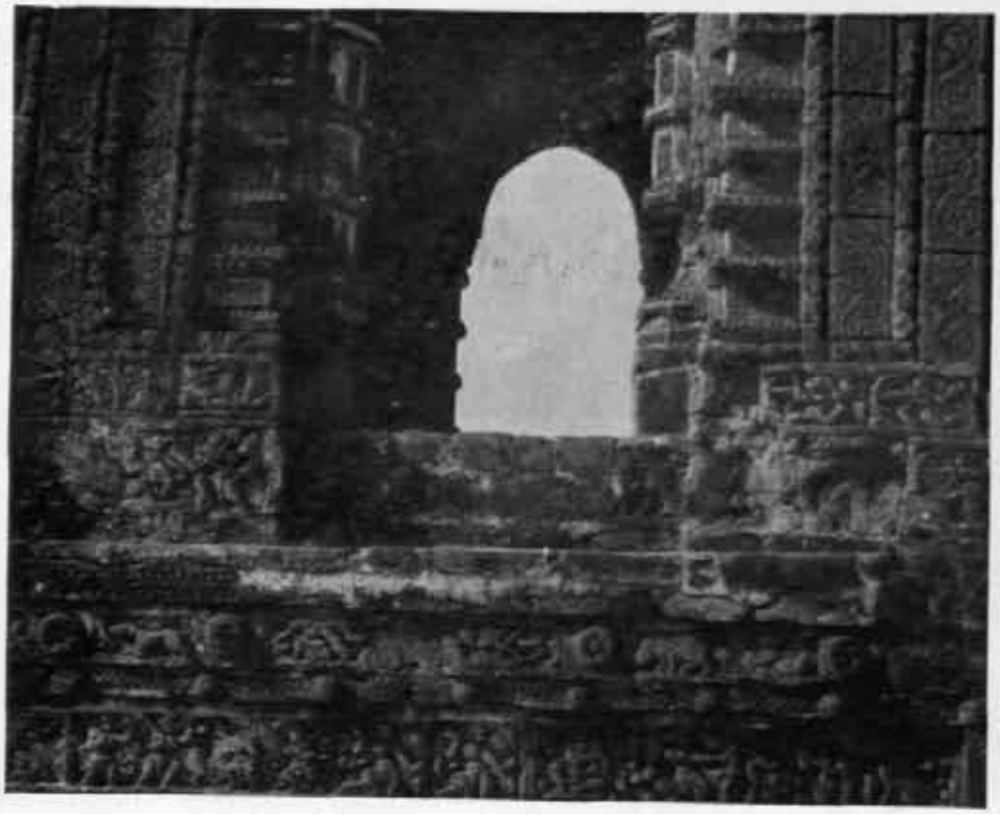


A



B

Teli-ka-Mandir, Gwalior: A, *before, and* B, *after treatment.* *See p. 126*



A



B

Syamarai temple, Vishnupur: A *before, and* B *after treatment.* *See p. 129*